SOCIAL BEHAVIORS AND SEX DIFFERENCES

OF LOW INCOME CAUCASIAN PRESCHOOLERS

BY

BETTY E. BOZLER

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1977

ACKNOWLEDGEMENTS

One of the culminating results of writing a dissertation is that it provides one an opportunity to thank those individuals who have had a significant part in making this particular event possible.

I wish to express my appreciation to the members of my committee for their personal interest, professional guidance, and patient understanding.

To my chairman, Dr. Gordon E. Greenwood, for his encouragement and scholarship, my most sincere gratitude. It was with Dr. Greenwood's use of the Socratic method that I learned the practical application of teaching styles.

I am indebted to Dr. John M. Newell for his willingness to take a chance on an unknown school teacher. From his teachings, and wise counsel, he guided me into many worthwhile academic experiences.

Many thanks to Dr. William B. Ware for making statistics a useful tool. His dedication to quality and understanding of teaching principles has made educational research exciting.

I should like to thank Dr. Barry J. Guinagh for his shared enthusiasm for early childhood education. For once there was someone else who also believed in Mr. Rodgers.

My gratitude to Dr. Richard J. Anderson for his insightful teaching of tests and measurement. Dr. Anderson's capability to tie psychological constructs to mathematic principles was greatly appreciated.

TABLE OF CONTENTS

LIST OF TABLES

SOCIAL BEHAVIORS AND SEX DIFFERENCES OF LOW INCOME
CAUCASIAN PRESCHOOLERS

By

Betty E. Bozler

December 1977

Chairman: Gordon E. Greenwood
Major Department: Foundations of Education

The social behaviors of 106 low income Caucasian preschoolers

were investigated with the Preschool Behavior Q-sort. A two-factor

structure accounting for 50 percent of the total variance was obtained.

The two factors were labeled Impudent Behavior and Goal-Task Oriented

Behavior. Statistically significant relationships were found when each

of the factors were regressed on cognitive skill scores based on the

Denver Developmental Screening Test and demographic information.

Factor I, Impudent Behavior, was significantly predicted by demographic

characteristics ($\underline{R}$ = .48), while Factor II, Goal-Task Oriented Behavior,

was significantly predicted by both cognitive skill scores and

demographic characteristics, with cognitive skills accounting for

most of the variance ($\underline{R}$ = .63). The two demographic characteristics

significantly predicting Impudent Behavior were one-parent families

and male preschoolers ($\underline{p}$ < .01). The two demographic characteristics

and three cognitive skill scores which contributed significantly to

Goal-Task Oriented Behavior were two-parent families of preschool girls with higher language, fine motor, and gross motor scores.

The two-factor structure presents a different result than found from Baumrind's investigation of social behaviors of upper-middle income preschoolers based on the same instrument, the Preschool Behavior Q-Sort. Baumrind found a seven-cluster solution which was not supported in the present study with either cluster or factor analysis. Relationships between some of Baumrind's clusters and the two factors of the present study indicate the two-factor structure may be a more adequate way to assess social behaviors of preschoolers when using the Preschool Behavior Q-Sort. Further evidence of the relevance of the two social behavior factors was indicated by the relationship between Factor I, Impudent Behavior, and demographic characteristics; and Factor II, Goal-Task Oriented Behavior, and cognitive skill scores. With further investigation of these two social attributes the relationships of social competencies to school and life success may be better understood.

CHAPTER 1

INTRODUCTION

One of the paradoxes of our educational system is the continual
awareness of the importance of the total development of the child,
while information concerning child competencies in areas other than
academic performance remains relatively unavailable. It is widely
believed that the total development of the child, her or his social
behaviors, life styles, and home environment, contributes to adult
success and happiness. Yet these aspects of a child's life are not
considered as part of the educational process. Most information on
children in the school setting is of a cognitive nature. The cognitive
skill information available generally includes the areas of mathematics,
reading comprehension, word attack skills, vocabulary, and so forth.
The noncognitive trait area referred to here as social behaviors is
not well understood nor is it normally measured in the school
environment. Presently social scientists have difficulty agreeing
upon what to name the social traits. Social behaviors or traits have
been given such labels as responsibility, curiosity, aggression,
authoritarianism, and the like. Studies in the area of social
behaviors not only disagree with how to label or name traits but also
debate how to measure these social attributes. While social scientists

1

believe that social behaviors of children may have greater impact on life success than cognitive attributes, virtually no empirical evidence is available to support such an assumption.

Presently there is one longitudinal study examining the social behaviors of preschoolers. Baumrind has explored child social behaviors as they relate to child rearing practices from the conventional child development approach (Baumrind, 1967, 1971a, 1971b, 1972a, 1972b). The overall purpose of the present study is to build upon the work of Baumrind by further exploring social behaviors of preschoolers and to relate social behaviors of children to the educational setting.

Baumrind has developed a sophisticated instrument and test procedure from which to investigate social behaviors of children (Baumrind, 1971a; Baumrind and Black, 1967). Her approach to social behaviors of children is specified within the framework of instrumental competence. The behaviors associated with instrumental competence include the attributes of friendliness, cooperativeness, purposefulness, and self-reliance (Baumrind, 1972b). This is the definition and structure from which this study will investigate the social behavior of low income Caucasian children.

Generalization from earlier social behavior studies is not forthcoming as a result of methodological problems. Two of the greatest difficulties of this area are the inconsistent use of social behavior

labels and the unavailability of label definitions. Baumrind's current longitudinal investigation of early childhood social behavior, as cited above, surmounts one of these problems; social behaviors are well defined. Baumrind's social behavior scale clearly delineates test items and rater training procedures. Presently Baumrind's instrument has only been utilized with high income children (Baumrind, 1971a, 1972a). The purpose of the present study is to use Baumrind's sophisticated instrument with a different population to determine if similar psychological labels for social behaviors are forthcoming. It is only with continued test development in the area of social behaviors that the relationship between school success and social behaviors will be understood.

It is the further intent of this study to explore the relationship of demographic and cognitive skills to preschooler's social behaviors. Baumrind's investigations of high income white and professional black families suggest ethnic as well as sex differences, but the sample size limits further interpretation (Baumrind, 1971a, 1972a). To date no studies sufficiently consider the relationship between social behaviors and cognitive skills.

In summary, the purpose of this study is to investigate social behaviors of low income Caucasian preschoolers using Baumrind's instrument, the Preschool Behavior Q-Sort. This study attempts to determine the consistency in the underlying structure of Baumrind's instrument. In addition, this study investigates the relationship of demographic information and cognitive skills to the social behaviors of preschoolers.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Until recently little systematic information has been available
concerning social behaviors of preschoolers. Social behaviors of
children have not previously been well isolated as a result of many
methodological problems. Social scientists do not agree upon how
to define social behaviors, how to label social behaviors, nor how
to measure social behaviors. Yet it is widely believed that social
behaviors of children influence adult life (Jencks, 1972; Maccoby
and Jacklin, 1974; Murphy, 1947). Social attributes may well have
greater impact on life success than cognitive skills. If this is
true, then educators must revamp the educational process; they must
look beyond cognitive growth. However, presently there is no empirical
evidence to validate the influence of pupil social behaviors on later
adult success. Obviously, it will take many years to provide evidence
of the relationship of social attributes and adult success. The
purpose of this study is to begin to explore social behaviors of low
income Caucasian preschoolers based on one of the most sophisticated
instruments currently available, the Preschool Behavior Q-Sort.
Presently this instrument has not been used with the low income
population. Furthermore, the Preschool Behavior Q-Sort has only been

4

used with an upper income population. Hence, this study explores the following questions: Does the underlying structure of the test instrument remain the same when extended to a low income Caucasian population? Do sex differences and such demographic characteristics as parent occupation, family structure (one-parent or two-parent families), number of siblings, and age of child influence the social behaviors? What relationship exists between the social attributes and the cognitive skills? The attempt to answer such questions is a necessary step in ultimately examining relationships between social behaviors and later success in school and life.

To date one of the most advanced investigations of social behaviors in young children has been reported by Baumrind (Baumrind, 1966, 1967, 1971a, 1971b, 1972a, 1972b; Baumrind and Black, 1967). Baumrind has looked at instrumental competence in preschoolers of upper income families and related these child behaviors to parental behaviors. Her approach to social behaviors of children is specified within the framework of instrumental competence (Baumrind, 1972b): This is the structure from which the present study investigates the social behaviors of low income Caucasian children. In order to understand Baumrind's approach, the first two sections of this chapter are related to her work. The first section provides the reader with Baumrind's definition of instrumental competence. This is followed by a section which summarizes her investigations. In order to appreciate past efforts in this area and to tease out trends in the social behavior research, a third section will consider methodological

problems in social behavior research. Since a variety of demographic characteristics have been found to influence social behaviors of children, the last three sections of this chapter report differences of social behaviors as they relate to ethnic, sex, and social class.

Definition of Instrumental Competence

One of the more rigorous investigations of social behavior has been initiated by Baumrind (Baumrind, 1967, 1971a, 1972a, 1972b). Baumrind has studied social behaviors of children from the framework of instrumental competence. Baumrind defined instrumental competence as "behavior which is friendly rather than hostile to peers, cooperative rather than resistive with adults, achievement rather than nonachievement-oriented, dominant rather than submissive, and purposive rather than aimless" (1972b, p. 205). Instrumental competence includes those behaviors that are relevant to group and individual survival in any society or subculture. Baumrind divides instrumental competence into two domains, social responsibility and independence. Social responsibility was defined to include the following subcategories:

(a) Achievement-oriented vs. Nonachievement-oriented. This attribute refers to the willingness to persevere when frustration is encountered, to set one's own goals high, and to meet the demands of others in a cognitive situation as opposed to withdrawal when faced with frustration and unwillingness to comply with the teaching or testing instructions of an examiner or teacher.

(b) Friendly vs. Hostile Behavior Towards Peers. This refers to nurturant, kind, altruistic behavior displayed toward agemates as opposed to bullying, insulting, selfish behavior.

(c) Cooperative vs. Resistive Behavior Towards Adults. This refers to trustworthy, responsible, facilitative behavior as opposed to devious, impetuous, obstructive actions (Baumrind, 1972b, pp. 205-206).

The second major domain of instrumental competence, independence, was defined to include the following behavioral dimensions:

(a) Domineering vs. Tractable Behavior. This attribute consists of bold, aggressive, demanding behavior as opposed to timid non-intrusive, undemanding behavior.

(b) Dominant vs. Submissive Behavior. This category refers to individual initiative and leadership in contrast to suggestible, following behavior.

(c) Purposive vs. Aimless Behavior. This refers to confident, charismatic, self-propelled activity vs. disoriented, normative, goalless behavior (Baumrind, 1972b, p. 206).

In summary, Baumrind related instrumental competence to two social domains, those involving independent behavior and responsible behavior. Under the domain of responsible behavior are the subcategories labeled Achievement Oriented, Friendly, and Cooperative Behavior. Similarly, subsummed under the domain of independent behavior are the subcategories labeled Domineering, Dominant, and Purposive Behavior. These subcategories are the social behavior labels Baumrind derived from her research with the Preschool Behavior Q-Sort. Further understanding of these subcategories and categories of instrumental competence is provided by Baumrind's research.

Baumrind's Investigations

Since Baumrind's early studies, she developed a sophisticated
72-item observational rating Q-sort to analyze socially responsible
and independent behavior in young children. Baumrind utilized a
multidimensional approach to social behavior. The psychological
constructs such as independence, dependance, and dominance were not
considered observable behaviors as in past studies. Rather,
72 behaviors were recorded by observers as highly characteristic
of a child, moderately characteristic of a child, or very uncharacter-
istic of a child. With the use of cluster analysis techniques these
72 items were free to cluster without predetermined topology.

Baumrind derived seven clusters from her research (Baumrind,
1971a). These clusters were the bases for her definition of
instrumental competence (Baumrind, 1972b). Baumrind defined
instrumental competence as those behaviors related to responsible
and independent behavior. She further divided these two behavior
groups into subcategories. Her subcategories corresponded directly
to the seven clusters found in her research. The seven clusters were
labeled: Achievement Oriented, Friendly, Cooperative, Domineering,
Dominant, Purposive, and Independent. The first three clusters were
subsummed under the domain of independent behavior. Appendix A provides
the clusters Baumrind found and the specific test items from which
the cluster names were derived.

Baumrind's exploration of instrumental competence was only one
aspect of her study. Basically, Baumrind investigated instrumental
competence in upper class preschool children in order to relate these
behaviors to parental behaviors (Baumrind, 1971a). Ratings were made
on the Preschool Behavior Q-Sort for each child after direct observa-
tional data had been collected by psychologists for 134 children over
a three- to five-month period. In addition, parents of each preschooler
were interviewed and observational data concerning child-rearing tech-
niques practiced by these parents were collected during two three-hour
observations in the family dwelling. Many of the results dealt with
the categorization of child-rearing practices and their relation to
child behaviors. Reported here are those findings related to social
competencies of upper income perschoolers.

In general Baumrind found a high relationship between a child's
I.Q., as measured by the Stanford-Binet, and the behavior variables
Independent and Achievement Oriented, as measured by the Preschool
Behavior Q-Sort. Appendix A delineates the behaviors and the previously
derived clusters from the Q-Sort test.

Baumrind reported that boys showed more hostility with peers,
were more resistive to adult supervision, and were less achievement
oriented than were girls. Correlations of the seven clusters obtained
from cluster analysis of the Preschool Behavior Q-Sort instrument
indicated no relationship between Resistive and Achievement Oriented
clusters for girls (-.06), while boys showed a negative relationship
(-.40). Thus girls that were resistive with adults were not necessarily

nonachieving, while resisting boys were nonachieving. Along these
same lines, the Domineering Behavior cluster was more closely related
to Dominant and Purposive clusters for girls, while the Domineering
Behavior cluster tended to relate to Hostile, Resistive and Nonachieving
clusters among boys (Baumrind, 1971a).

The Preschool Behavior Q-Sort was originally developed by Baumrind
and Black (1967) in an effort to measure child behaviors that could
be compared to parental socialization patterns. This earlier study
was composed of 103 preschoolers from three to five years of age.
The children were observed and rated by two psychologists over a three-
month period. Final scores for each child were derived from a composite
of the psychologists' ratings. Since then Baumrind has developed
further the Behavior Q-Sort, reducing the number of items to 72.
Using this instrument in her more recent study (1971a), Baumrind found
similar clusters of behavior for each sex within the upper-middle class.

To date no one has used Baumrind's instrument to see if the
same factor structure and sex differences will emerge for low income
children. However, Baumrind's exploratory study of nine lower middle
professional income Negro families suggested that patterns of social
behavior will vary for different groups of people (Baumrind, 1972a).
These families participated in the study of instrumental competence
and parent behavior previously discussed (1971a), but were reported
separately due to differences in ethnicity (1971b). Within this group
of nine families the most authoritative families produced the most
independent and autonomous girls. In Baumrind's study of upper-middle

income white families it was found: (a) authoritarian parents had children that lack independence but exhibit greatest social responsibility; (b) authoritative parents had children that were more socially responsible and independent; (c) permissive parents had children who lacked social responsibility and did not have high independence as was expected (Baumrind, 1971a). From these studies it was not possible to determine what effect socioeconomic factors might have had on the social attributes. Baumrind, as well as other investigators, has urged the study of within-group differences of disadvantaged families in order to clarify dimensions of social behavior and sex differences (Boger and Anbron, 1969; Baumrind, 1972b; Maccoby and Jacklin, 1974). Moreover to more adequately provide equal educational opportunity for all children the variables affecting within-group differences must be further understood.

While Baumrind's instrument, the Preschool Behavior Q-Sort, has only been used with upper income Caucasian and professional Negro families, it represents a well planned instrument in the area of social behavior research. This test presents itself as an instrument to investigate social behaviors of a different population. The advantages of the Preschool Behavior Q-Sort can be more greatly appreciated when one considers the tremendous methodological problems that have plagued social behavior research. Consideration of confounding procedural difficulties also provides insight for the interpretation of research results in this area.

Methodological Problems

The assessment of social behaviors has been limited by a number of methodological problems. There are four major procedural deficits in most of social behavior research:

1. There is no standard set of labels or definitions for social behavior.

2. Social behaviors have been approached unidimensionally rather than multidimensionally.

3. There is a lack of rigorous and well defined training procedures.

4. The studies of social behaviors have not been carried out as exploratory descriptive studies.

Because these methodological problems have not been adequately dealt with in past social behavior research, the interpretation of the results has been compromised. Each of the four problems will now be discussed in detail.

As mentioned above, one area of concern has been the lack of agreement among social scientists as to the names of psychologically meaningful social-trait attributes (Jencks, 1972; Maccoby and Jacklin, 1974). For example, behaviors labeled "aggression" in one investigation may refer to behavior "with intent to injure" or "trouble-making" behavior, while in other studies aggression refers to "assertive, curious, directing behavior" as well as "destructive behavior" (Devito, 1975; Dorman, 1973; McKee and Leader, 1955). While these behavior

names appear to overlap, the study of social behaviors could better
be evaluated empirically with use and recognition of a large set
of specifically defined social behavior attributes.

A necessary first step in the area of social competence research
will be for social science researchers to clearly define the terms
employed. Baumrind has taken an important step in her investigation
of young children's social behaviors (Baumrind, 1971a). In her
study terms are clearly delineated and examples of acceptable and
nonacceptable child behaviors are included as presented earlier in
this chapter. Only with precise definitions of social behaviors
can replication and the capability for predictability be established.

In addition to inconsistent application of terminology, much
of the literature has been plagued with a unidimensional
interpretation of social behavior attributes. Take, for example,
the labels "aggression" and "dependence." Often a child is considered
either as being aggressive or nonaggressive, dependent or independent.
Only Baumrind's investigation and a few other studies allow for social
behaviors of children to be multidimensional (Baumrind, 1971a; Baumrind
and Black, 1967; Kagan and Moss, 1960, 1962). A multidimensional
approach might allow for a child to be considered dependent when
seeking emotional support from a significant adult and independent
when pursuing a task by himself. Many past studies of social behavior
do not allow for such a sophisticated approach (Becker and Krug, 1964;
Beller, 1955, 1957; Kohn and Rosman, 1972a, 1973c, 1974; Sears,
Whiting and Nowlis, 1953). A multidimensional approach is

necessary in order to understand the realm of social behaviors.
Labels must not be so designated as to mutually exclude one another
(Hartup, 1963; Heathers, 1955b). Fortunately the multidimensional
approach to social behaviors of children seems to present a format
for understanding the complexities of human social behavior.

The third procedural problem that limits generalization in
social behavior research is the lack of systematic training procedures.
Few of the investigations in this field provide information concerning
the training of observers or raters. Many of the studies indicate
there had been no training procedure or fail to report the training
method (Devito, 1975; Dorman, 1973; Flynn, 1974; Kohn and Rosman,
1972a, 1972b, 1973a, 1973b, 1973c, 1974). Yet a typical study of
children's social behaviors generally involves ratings by teachers.
A teacher may be requested to rate a child's behavior as either A
or B. For example, a rater may be expected to determine if a given
child exhibits more dependent or independent behavior toward the
teacher. When the teacher does not receive training for rating, it
is unlikely that several raters will perceive the constructs of
dependence and independence in a similar way. Some control for such
error could be provided by training the raters or observers. Baumrind's
investigation is one of the few that provide raters with a rigorous
training procedure (Baumrind, 1971a).

One may reasonably ask at this point why the majority of social
behavior studies have been plagued with methodological problems.
Perhaps the major reason is that many of the more recent social

behavior studies have not investigated social behaviors in a descriptive exploratory manner. This is possibly the greatest weakness of social behavior research. The majority of studies in this area include social behaviors as a small aspect to more global studies of child-rearing practices, parent-child interaction, sibling effects, and clinical health (Baumrind, 1967, 1971a, 1971b, 1972a, 1972b; Baumrind and Black, 1967, Bee et al., 1969; Berk, 1971; Koch, 1955; Kohn and Rosman, 1972a; Sears et al., 1953; White and Watts, 1973). It is with future detailed descriptive studies of social behaviors that these methodological difficulties may be remedied.

In summary, a variety of methodological problems have rendered much of the previous social behavior research inappropriate for generalization. Unfortunately investigators have used a multitude of names to describe the social behaviors under study. The inconsistent labeling procedure has been further hindered by the unavailability of specific definitions for such labels. In addition, a number of studies overly simplify the social attributes by placing them in polar opposition to each other. Further limitations are placed on many studies by a lack of systematic training procedures for observers and/or raters. Without training procedures to assure similar understanding on the part of observers or raters, interpretation of children's social behavior is restricted. Lastly, and most importantly, social behaviors have seldom been the main focus of an investigation. Social behaviors usually are studied as one aspect of more global research efforts. However, the previous social behavior research

does supply the investigator with trends regarding the relationship of social behaviors to demographic characteristics. It is the awareness of these trends as well as a few more recent investigations which go beyond the methodological limitations that provide the social scientist with the direction for further research in the area of children's social behaviors.

<u>Social Behaviors and Sex Differences of Preschoolers
from Middle Income Families</u>

Most studies which document sex differences report social behavior differences of young middle income children. It has been well documented that males are generally more aggressive than females, while females are usually more dependent and passive (Maccoby, 1966; Maccoby and Jacklin, 1974; Mischel, 1970; Terman, 1949). Even when young middle class preschoolers (two and one-half years of age) were screened first for birth complications, frequently counts of aggressive behaviors revealed males were significantly more aggressive than females (Pederson and Bell, 1970). Emmerich's (1966) longitudinal study of social behaviors of preschoolers from ages two through four years of age indicated more aggressive boys at two years of age became less aggressive by the age of four. While age differences were a contributing factor to social behaviors, males were generally considered more aggressive than females.

Recent reviews of the literature have indicated that "the female withdraws from attack rather than launching a counterattack and does

not initiate aggressive interactions as frequently as the male"
(Maccoby and Jacklin, 1974, p. 167). Mischel said there was "greater
dependency, social passivity and conformity in females than males"
(Mischel, 1970, p. 6). Before reviewing specific studies providing
partial support for these statements, it is important to note that
the factor analytic studies have not been able to isolate one factor
for the trait of dependency. Many investigations have not factor
analyzed their results. Instead, social behavior researchers have
made assumptions about what behaviors ought to be subsumed under
the name dependency. As a result, those studies reporting the effects
of dependent behavior have included widely varying behaviors and
actions which were subsumed under the label dependency. Because of
these discrepancies, the specific behavior as well as the labeled
traits have been included in the following discussion of related sex
differences.

The literature has well substantiated the sex related social
behaviors of higher aggression among preschool boys and greater
dependency among preshool girls. Furthermore, studies which consider
more specific social behaviors have begun to more tightly define
dependency behaviors of middle income preschool girls. One of the
first studies to look at sex differences (Hattwick, 1937) reported
ratings of preschool children's behaviors. Boys tended to be more
aggressive than girls, and girls tended to be more introverted and
stayed nearer adults significantly more often than boys. A more recent
study by Moore, Evertson and Brophy (1974) also found significant

sex differences concerning the dependency aspects of seeking the teacher. They found a significant correlation between onlooking behavior and seeking the teacher for both sexes. Moreover, for girls, seeking the teacher significantly related to goal-directed behavior, total solitary play, daydreaming and wandering as well as onlooking behavior ($p < .01$). This seeking out the teacher may indicate a different type of dependent behavior in girls than is apparent with boys. Moore et al. (1974) suggested that these findings may have been more definitive if the categories had been refined to separate instrumental dependency from emotional dependency. Again it is emphasized that dependency has been an obscure term; it may be more meaningful to simply omit the term and refer to the particular behaviors. Bowlby utilized this approach by delineating very specific dependency behaviors, which he labeled attachment (Bowlby, 1969). While the present study does not consider what has become known as attachment behaviors, Bowlby's dislike for the term dependency, with its many negative connotations, is supported by this investigation.

The higher dependency scores of females in the Sears et al. (1953) study points to the potential problems of sex-typing by adult raters. Sears et al. (1953), using women teachers as raters, found that middle income girls were significantly more dependent on teachers than were boys ($p < .02$), and girls' total dependency scores were also significantly higher than those for boys ($p < .05$). However, Gewirtz, who investigated the observation component of the Sears et al. (1953) study, did not find sex differences with his observational

measures of independency, dependency, and aggression. Gewirtz
reported his instrument relied too heavily on situational activities
to accurately assess these traits. Sears et al. (1953) found that
the teacher's ratings of dependency and negative attention-getting
behavior correlated negatively for girls, but correlated positively
for boys. Thus, negative attention-getting behavior for girls was
considered an independent behavior, but a dependent behavior when
observed in boys. This illustrates the infiltration of sex-typing
of children by adults when rating behavior, and must be considered
as a caution to all ratings of sex differences.

Several studies of social behavior of middle income children
show a shift over time in boys toward less aggressive behavior as well
as a pattern of greater independence (Emmerich, 1966; Kagan and Moss,
1960, 1962). Both investigations attribute these changes to cultural
reinforcement. Emmerich (1966) investigated consistency of
preschoolers' personality dimensions over four semesters in the
following areas: aggression-dominance, dependency, and autonomy.
Factor analysis of items based on 53 middle-class preschoolers' teacher's
ratings indicated that girls were more dependent (p < .01) and more
autonomous than boys. Autonomous boys as well as girls maintained
autonomous behavior the duration of the study, but aggressive boys
became more dependent over the four semesters. This age transformation
suggests a relationship among one's sex, behavior, and cultural social
reinforcement pattern, as Kagan and Moss (1960, 1962) also discussed.

The Kagan and Moss longitudinal social behavior research considered more specific aspects of dependent and independent behavior (Kagan and Moss, 1960, 1962). Their studies also have supported the environmental influences on sex-related shifts in behavior. Kagan and Moss (1962) studied the stability of personality variables over a fourteen-year period. They reported more stability of passive, dependent behaviors for females than males based on observations, ratings, and interviews. Data were analyzed for each of four periods: period I, from 0 to 3 years of age; period II, from 3 to 6 years of age; period III, from 6 to 10 years of age; and period IV, from 11 to 16 years of age. Only two modes of independent behavior were measured, the child's reactions in threatening and problem solving situations. It should be noted that threatening behavior may be more closely related to fear rather than dependency-independency tendencies. While fear may be more prominent in females, it is not a measure of independence in the sense of responsible, autonomous behaviors which refer to instrumental competencies.

Kagan and Moss delineated two forms of dependency: affectional dependency which includes behaviors of seeking affection, acceptance and emotional reassurance; and instrumental dependency which included the behavior of seeking assistance in problems situations. (As will be discussed later, middle income girls seem to be reinforced for seeking adult help, thus explaining the consistent instrumental

dependency noted for girls in this study.) Passivity was measured
in terms of reactions to frustration; either withdrawal or active
pursuit to overcome obstacles.

The Kagan and Moss longitudinal study found that relationships
among variables were more consistent at close age intervals than
at large age intervals. However, a comparison of measures from
periods I and IV showed continual affectional dependency for boys
($\underline{p}$ < .05). Comparisons of shorter intervals (I-III and II-III)
produced consistent affectional dependency for both sexes ($\underline{p}$ < .10).
Similarly, longer time intervals (I-IV and II-IV) between instrumental
dependency measures did not indicate significant correlations for
either sex. But comparisons of instrumental dependency for shorter
time intervals, I-III, were significantly correlated for both sexes,
and intervals II-III were significantly correlated for girls only.
From these data females showed a slight tendency for more consistent
dependency behaviors over time. Kagan and Moss suggested the
differential cultural expectations for boys and girls may have been
at work here. The dependent behavior of girls was more acceptable
and their independent behavior may have received variable (if any)
reinforcement. The dependency behavior of boys was more frequently
socially punished while their independent behavior was rewarded.
Thus the shift for boys from the II-IV period comparison showed movement
from less independent to more independent behavior.

Kagan and Moss (1960) have analyzed the data above in another
way, excluding the first period of 0 to 3 years of age, and adding

a fifth period including interview data between 20 and 29 years of age. This analysis also indicated more stability of dependency behaviors for females than for males. The most consistent patterns of dependency for girls emerged for the comparison of the 6 to 10 year period to the adult period. This same period was the least consistent for boys, indicative of the shift toward more independent behavior. The profound cultural influences noted in this study of children born in the 1930s may not hold as well in this decade of sex discrimination awareness. In addition, parents from professional families are thought to be more lenient toward their children's less-appropriate sex-typed behavior. However, only longitudinal studies will be able to assess these assumptions.

A recent investigation of middle income and professional families by Baumrind reported more specific relationships between kinds of aggressive and independent behaviors to achievement behavior (Baumrind, 1971a). Baumrind reported that boys showed more hostility with peers, were more resistive to adult supervision, and were less achievement oriented than were girls. Correlations of the seven clusters obtained from cluster analysis of the Preschool Behavior Q-Sort instrument indicated no relationship between Resistive and Achievement Oriented clusters for girls (-.06), while boys showed a negative relationship (-.40). Thus girls that were resistive with adults were not necessarily nonachieving, while resistive boys were nonachieving. Along these same lines, the Domineering Behavior cluster was more closely related to Dominant and Purposive clusters for girls, while the Domineering

Behavior cluster tended to relate to Hostile, Resistive, and Nonachieving clusters among boys (Baumrind, 1971a).

To date no one has used Baumrind's instrument to see if the same clusters and sex differences will emerge for low income children.

Social Behaviors and Sex Differences of Preschoolers from Low Income Families

Several earlier studies have supported the assumption of low income groups typifying the more traditional approach to child rearing and sex role (Kagan, 1964; Pope, 1953; Rabban, 1950). This view advocates that male and female roles may be more strongly delineated and imposed for the low income groups and less regulated for middle income groups. However, within-group differences of life style, family structure, size of family, and cultural-pedagogical factors make such assumptions overly simplistic.

The few more recent studies concerned with social behaviors of low income children for the most part have investigated only two aspects of socialization: aggressive behavior and achievement. While these studies were not inclusive of all behaviors defined by instrumental competence and were further hindered with methodological shortcomings, they shall be discussed in detail here.

Devito (1975) factor-analyzed teacher ratings of social behaviors of 403 E.S.E.A. Title I children for which independence and dependence were considered uni-dimensional. There were no significant sex differences within the kindergarten and first grade. Second and third

grade girls scored higher on two factors: achievement motivation and aggressive trouble-maker. The factors of creativity, dependency on teacher, comfort in school, and friendliness did not indicate sex differences.

Unfortunately the instrument used in Devito's study placed dependence and independence in polar opposition. Earlier studies have shown this to be an overly simplistic view of behaviors, possibly subsuming many behaviors with such labeling (Emmerich, 1964, 1966; Hartup, 1963). An additional limitation of Devito's study was the unavailability of information concerning teacher training and interrater reliability. Were teachers provided with definitions of dependence and independence? How did teacher ratings of the same child compare?

Devito's study of low income children and Baumrind's investigation of middle income children both found girls to be more achievement oriented than boys. Devito further found a relationship between aggressive trouble-maker behavior and motivation to achieve within the second and third grade girl group. While Baumrind did not find a similar relationship, possibly Devito's teacher ratings of trouble-making behavior were tapping Baumrind's trends of purposive, dominant, and domineering behavior. Devito's measures were not as detailed as Baumrind's behavior clusters. Baumrind's study must be replicated within a low income group of preschoolers before the extent of sex differences within the low class is understood.

Flynn (1974) reported sex differences from an examination of cognitive, achievement and social traits of 187 black and 8 white preschool migrant farm children based on an instrument he developed earlier. Both studies were based on teacher and teacher aide ratings. As Grossman and Levy (1974) noted in their study, the factor structure changed depending on the group of teachers and/or teacher aides rating the behaviors. The change in factor structure must be considered with Flynn's results as well.

Flynn found risk-taking behavior related to achieving behavior for girls. He further found motor inhibition and delay of gratification influenced boys' achievement scores. This may be similar to Baumrind's findings of correlations between dominant, domineering, and purposive behavior for girls and domineering, dominant, and non-achievement behavior for boys. The less achievement oriented boys of Baumrind's study were more aggressive. However, until the large numbers of specific behaviors explored by Baumrind have been investigated with low income groups, support of such an assumption is not forthcoming.

Dorman (1973) investigated the relationship of assertive behavior and cognitive performance of Head Start boys and girls. Assertive behavior included curiosity, question asking, and aggression. These behaviors were recorded during an experimental study. Aggression was demonstrated by knocking over plastic glasses in order to retrieve a toy positioned behind the glasses. It was interesting to note that 22 percent of the preschoolers would not respond to the experimental condition. They refused to knock the glasses over. There were no

controls for home values and consequences regarding knocking glasses over, which may have confounded the results; i.e., particularly inhibiting aggressive or risk-taking behavior of girls. Since assertive and aggressive behaviors correlated with each other, Dorman placed all of the behaviors together and labeled them assertion. This global behavior labeled assertion which included self-directing, curious and aggressive behaviors of preschoolers was found to relate to higher Stanford-Binet scores.

McKee and Leader (1955) investigated aggressive and competitive behaviors of 112 three and four year olds, equally divided between sex, age, and lower and middle classes. Competition was defined as behavior with intent to communicate superiority to another, and aggression was delineated as behavior with intent to injure another. Observational data were collected as pairs of children of the same sex, age, and socioeconomic status played in a specially prepared room. These observational reports were later rated by judges "familiar" with the child. Lower class children were significantly more aggressive and competitive than middle class preschoolers. Boys in both classes displayed more competitiveness and aggressiveness than girls. There were no other consistent sex or age differences. Thus the McKee and Leader (1955) study was in agreement with many earlier investigations which have found boys more aggressive. However, how aggressive behaviors relate to cognitive behaviors and other social behaviors or social competence was not determined.

A study by Berk (1971) related frustration encounters and adaptation of low and middle class children in structured and unstructured preschools. Berk found no significant socioeconomic status differences regarding incidence of frustrating encounters. However, low income children's adaptations to frustrating situations varied significantly. Low income children used physical attack more often than middle class children, while middle class children used explanation more frequently. There was a tendency for low income children to use verbalization less often as a form of adaptation. Boys were not more offensive-combative than girls. Offensive-combative included the behaviors classified as threatening, refusing, commanding, pursuing, and physically attacking. Girls were not more dependent-compliant than boys, which included whining, complying, and seeking assistance.

Comparing Berk's study (1971) to Baumrind's (1971a), similar patterns emerge. Neither study noted more aggressive or offensive-combative behavior or more dependent behavior by either sex. Berk's study reported results in opposition to McKee and Leader's (1955) findings of greater aggression among boys of low and middle income groups. Berk found low income children of both sexes used greater amounts of physical attack.

To summarize, with so few social behavior studies of low income children reported in the literature, generalizations are difficult to make. Several rating studies indicated that low income girls' achievement correlates with aggression trouble-maker (Devito, 1975)

and risk-taking behavior (Flynn, 1974). But this may have been caused by raters equating negative behaviors in girls to forms of autonomous achievement striving behavior, as Sears et al. (1953) noted. As discussed earlier, Sears et al. found teachers rated negative attention getting behavior in girls as independent striving behavior while this same behavior in boys was rated as dependent behavior. Hence, significant sex differences between achievement and aggression may be influenced by the rating procedures of these studies.

Observational studies which directly record observed behaviors rather than indirectly rate observed behaviors after the fact (Berk, 1971; Dorman, 1973; McKee and Leader, 1955) have not found sex differences within groups of low income children. The studies of Berk (1971) and McKee and Leader (1955) both compared middle income children to low income children. Both studies found low income children used higher amounts of physical attack.

When the low income studies are compared as a group to Baumrind's middle class preschool study (1971a), some patterns emerge. Baumrind (1971a), Flynn (1974), and Devito (1975) all noted a relationship for preschool girls between achievement and one of the following behaviors: risk-taking, aggression, and domineering behavior. Possibly the low income studies, while using differing terminology, were determining the triads of behaviors Baumrind found to correlate positively for preschool girls: domineering, dominant, and purposive behavior.

In Berk's (1971) study of frustration encounters and adaptation, preschoolers of middle and low income children demonstrated class but not sex differences. Low income children used greater amounts of physical attack. How this finding may relate to social competence of low income preschoolers is unknown. Neither the Berk nor Baumrind study noted more aggressive, offensive-combative behavior, or dependent behavior by either sex.

To generalize, the studies reporting sex difference seem to indicate that low income girls and boys are equally autonomous. Those children most autonomous may also be more achievement-oriented, domineering, and purposive. In addition, boys exhibiting greater amounts of aggression may be less achievement oriented, and girls exhibiting greater amounts of independence may be more resistant to peer and adult influences. However, this speculation is not well substantiated in the literature. As many writers have stressed, continued study of low income children's behaviors are necessary before sex, social, and achievement patterns are clearly understood (Baumrind, 1972a; Boger and Anbron, 1969; Maccoby and Jacklin, 1974). This present study of social behaviors of low income perschoolers is an attempt to clarify the relationship of sex, social and achievement patterns.

Social Behaviors and Ethnicity

It has long been theorized that inadequate performance in school is related to class and ethnic differences (Hunt, 1968; Jensen, 1974). In practice ethnicity and social class confound the available empirical information since a large proportion of non-white ethnic groups are of low socioeconomic status (Boger and Anbron, 1969; Hunt, 1968). While social scientists realize the importance of independently evaluating ethnicity and social class, few such investigations exist. Only one study of social behaviors of preschoolers was controlled for ethnic group membership. Manning, Pierce-Jones and Parelman (1974) found disadvantaged female preschoolers differed in the amounts of cooperative behavior exhibited. When pairs of preschoolers were matched by ethnicity they cooperated more than when mixed. Anglo-American girls were less cooperative than Mexican-American or Negro girls. Unfortunately the term disadvantaged was defined only by participation in a Head Start program. No demographic information was available to insure similarity of background. Until social scientists rigorously control for group differences the ramifications of ethnicity will not be well understood.

In an exploratory study of nine lower-middle income professional black families it was suggested that different groups of people might facilitate varying patterns of social behavior (Baumrind, 1972a). Baumrind studied the relationship of child-rearing practices to child social behaviors of these nine families. These families participated

in her study of instrumental competence and parent behavior previously discussed (1971a), but were reported separately due to differences in ethnicity (1971b). Within this group of nine families the most authoritative families produced the most independent and autonomous girls. In Baumrind's study of upper—middle income white families it was found: (a) authoritarian parents had children that lack independence but exhibit greatest social responsibility; (b) authoritative parents had children that were more socially responsible and independent; (c) permissive parents had children who lacked social responsibility and did not have high independence as was expected (Baumrind, 1971a). Obviously, the small number of black professional families makes generalization impossible.

In summary, the two studies discussed above indicate that ethnicity might influence child behaviors. However, many more studies are necessary before generalization is permitted. Assumptions have been made by social scientists that social class and ethnicity will influence a child's behavior. Thus, possibly one could expect social behavior differences. Presently there are no empirical investigations to either support or deny such an assumption.

Summary

There are relatively few studies reported in the literature that systematically explore social behaviors of preschoolers. The insufficient information concerning social behaviors of young children is largely a result of methodological problems. Social scientists have not been able to isolate and define social attributes acceptable to the majority of investigators. As a result, social behavior research is splintered and non-directed. These difficulties are further complicated by failure on the part of many studies to provide systematic training procedures and rigorous analysis of the data. There is one longitudinal investigation which surmounts many of these problems (Baumrind, 1971a). Baumrind has developed an instrument which clearly defines social behaviors of preschoolers. In her study, social behaviors are viewed from the framework of instrumental competence. Instrumental competence is the capability of a person to function adequately in society. Such a person exhibits socially responsible and independent behaviors (Baumrind, 1972b). It is from this structure that the present study further investigates social behaviors of preschoolers.

Baumrind's investigation was limited to upper and middle income professional Caucasian and Negro families (1971a, 1972b). Her exploration of ethnic differences indicates that one ought to control for group differences. The sample size was too small to allow further interpretation of the influence of ethnicity. Baumrind's Caucasian

sample was large enough (N = 134) to allow some support for social behavior sex differences. In general Baumrind found a high relationship between a child's I.Q., as measured by the Stanford-Binet, and the behaviors independence and achievement oriented, as measured by the Preschool Behavior Q-Sort. Boys were more hostile with peers, more resistive to adult supervision, and less achievement oriented than were girls. Greater resistive behavior from boys correlated positively with nonachieving behavior. Resistiveness in girls was not related to their achievement behavior. Domineering behavior of girls correlated positively with purposive behaviors, while domineering behavior in boys correlated positively with hostile, nonachieving patterns.

Overall, the literature indicates that Baumrind appears to have developed a very promising, possibly the most promising methodology for the measurement of social competencies in children.

Studies of preschoolers' social behaviors which control for sex differences are so methodologically weak that interpretation and speculation are warranted. Additionally, discussion of the related effects of social class and ethnicity is limited as there is only one study that systematically controls for ethnicity and no studies that rigorously control for ethnicity, social class, and social behaviors. Because of these limitations in the literature, the present study was initiated. The purpose of this study was to begin to bridge the gaps by using Baumrind's instrument with a different population. It is only with systematic descriptive exploration of

social behaviors that social scientists will be able to begin to understand the relationship of adult success and school achievement to the social behaviors of children.

CHAPTER 3

RESEARCH DESIGN

Statement of Problem

To provide appropriate education for each child, consideration
must be given to areas other than academic skills. One such area,
social development of children, has been recognized as a potentially
important contributor to academic success and more importantly to
a satisfactory adult life (Bowlby, 1969; Erikson, 1963; Murphy, 1947).
Many studies have attempted to relate social behaviors of children
to academic success and performance in adult life (Kagan and Moss,
1960, 1962; Sears, Whiting and Nowlis, 1953). Most of these studies
fall short of their goal due to varying definitions of social behavior
and methodological problems related to the measurement of social
behaviors. Before one can reliably investigate relationships of
achievement, adult performance, and child social behaviors, a rigorous
procedure for measuring social behavior must be developed. Baumrind
has developed a promising instrument to measure social behaviors
which avoids many of the pitfalls of previous classification systems
and allows for assessment of sex differences. Presently her instrument
has been used only with upper-middle income families.

35

The purpose of this study was to investigate social behaviors of low income Caucasian children within the framework of Baumrind's conceptualization of instrumental competence. To date there are few studies of social behaviors of low income children. Investigations of social behavior generally consider only aggressive and competitive aspects of social development. No study has explored the social behavior of low income children as delineated within the framework of instrumental competence as set forth by Baumrind. Thus it is the intent of this study to explore the social behavior of low income Caucasian children from a framework of instrumental competence. Only after such baseline data have been collected can direction be provided for further study of possible relationships among successful academics, social development, self-concept, and reinforcement history.

The specific hypotheses this study attempted to answer are as follows:

1. There are no differences between Baumrind's seven clusters of child instrumental competencies based on children from upper-middle income families and the factors derived from this study based on children from low income Caucasian families.

2. There are no differences between Baumrind's seven clusters of child instrumental competencies based on children from upper-middle income families and the clusters derived from this study based on children from low income Caucasian families.

3. If the factors of this study correspond to Baumrind's clusters, then it is hypothesized that:

3a. There is a positive correlation between factors labeled Achievement Oriented and Independent.

3b. There is a positive correlation between factors labeled Achievement Oriented and Domineering.

3c. There is a positive correlation between factors labeled Achievement Oriented and Purposive.

3d. There is a positive correlation between factors labeled Domineering and Purposive.

3e. For boys there is a negative correlation between the factor labeled Achievement Oriented and the following two factors, Hostile to Peers and Resistive to Adult Authority.

3f. For girls there is a positive correlation between the factor labeled Independent and the following two factors, Hostile to Peers and Resistive to Adult Influence.

Several studies reviewed earlier indicated a relationship between the social competency labeled Achievement, and I.Q. scores (Baumrind, 1971a); or between the social competencies labeled Achievement and Cognition (Dorman, 1973; Flynn, 1975). Other than the Stanford-Binet scores reported by Baumrind's middle income study, none of the studies measured cognitive skills based on the test performance of the children. To further understand possible relationships between cognitive skills based on the child's test performance, such as those measured by the Denver Developmental Screening Test and a social competency labeled Achievement, the following hypothesis was formulated.

4. There is a significant correlation between the three cognitive scales of the Denver Developmental Screening Test which are labeled Language Skills, Fine Motor Skills, and Gross Motor Skills, and the factor labeled Achievement Oriented of the Preschool Behavior Q-Sort.

5. There is a significant correlation between factor scores and the following demographic characteristics: sex of preschooler, number of siblings, occupation of parents, family structure, and age of preschooler.

Procedure

The Sample

The study included 106 white low income children from Somerville, Massachusetts. Somerville is one of the most densely populated cities in our country with approximately 88,800 persons dwelling within a 3.9 square mile area ("Massachusetts," 1972). The most current occupation information indicates 16% of the population were either professional, technical, kindred manager, officials, or proprietors, and 84% of the population were craftspersons, operatives, clerks, salespersons, service workers, or laborers. ("Eastern Middlesex," 1976). The educational attainment of the population consisted of 46.7% with high school diplomas and 6% with college degrees.

Of the 106 children participating in the study, 55 were girls and 51 were boys. All children qualified for and participated in E.S.E.A. Title I preschool programs. In order to qualify for the Title I

preschool programs, families had to have been eligible for Aid To
Dependent Children (ADC). All families met this criterion. The
age range of the children was from 3 years, to 4 years and 11 months.
A letter was sent to all families explaining the nature of the study.
(See Appendix B for a copy of the letter sent to each family.) One
family refused to allow its child to participate in the study
because the child was presently in another study. Another family
failed to sign and return the permission slip after three letters
had been sent home. Six other children were excluded from the study
because of ethnicity. This investigator felt that it was best not
to complicate the study with ethnicity variations because the empirical
evidence of social behavior of children is so limited. Thus 3 Negro
children, 2 Portuguese children, and 1 Spanish child were not included
in the study.

TABLE 1

ATTRITION RECORD OF POTENTIAL SUBJECTS

Reasons for Elimination	Number Eliminated
Refusal	2
Minority Family	6
Remaining Sample (N = 106)	0

Definition of Low Income

Throughout this study the group investigated is described as a low income group. This definition is derived from occupational status and income level.

Occupational status was derived from a 1966 replication of an earlier, 1947, occupational prestige study (Hodge, Siegel and Rossi, 1966). In these studies a representative sample of adults was asked to rate the general standing of ninety occupations according to a five point system. The ratings from these two studies correlated .98, indicating continued agreement of an occupational hierarchical status within the United States. Occupations received numerical rankings from 34 to 96.

Based on these rankings the occupations were divided into two groups as follows: 96-67 white collar or high income, 66-35 blue collar or low income. See Appendix C for the rankings of occupations.

In this study occupational information was collected for each working parent. Below are the occupations not specified in the ninety occupations ranked in the above studies. Each occupation is ranked as white collar or blue collar, as shown in Table 2. From this categorization it is apparent that all but five families can be considered blue collar workers.

Income level was the second criterion for status. It was decided that all families qualifying for public assistance and living in public housing projects would also be considered low income. The

TABLE 2

ADDITIONAL OCCUPATIONS

Income Level	Occupation	Number per Occupation
High	Accountant	1
High	Teacher	2
High	Underwriting Supervisor	1
High	Asst. Bank Manager	1
Low	Bus Driver	1
Low	City Worker	1
Low	Claims Clerk	1
Low	Car Dealer	1
Low	Bank Guard	1
Low	Bank Teller	1
Low	Junk Yard	1
Low	Carpenter	1
Low	Electrician	2
Low	Fireman	1
Low	Machinist	1
Low	Meter Reader	1
Low	Optical Lenses Maker	1
Low	Ramp Agent	1
Low	Secretary	1
Low	Shipper	1
Low	Switchboard Operator	1
Low	Telephone Lineman	1

five families classified as white collar via occupation classification all qualified for economic assistance and all were living in a public housing project. Thus all 106 families participating in this study qualified as a low income group.

Instrumentation

The Preschool Behavior Q-Sort

The Preschool Behavior Q-Sort is an instrument which measures social responsibility and independence of children from 3 to 5 years of age. These behaviors generally fall within the domain of interpersonal behavior, with the exception of several achievement-oriented behaviors. The instrument consists of 72 defined dichotomized statements concerning a child's behaviors. The test requires an adult to sort the 72 items into three major categories: highly characteristic of the child; somewhat characteristic of the child; uncharacteristic of the child. These three major divisions were each further divided into three categories for a total of nine groups:

    Category 9   Extremely characteristic or salient
    Category 8   Quite characteristic or salient
    Category 7   Fairly characteristic or salient

    Category 6   Somewhat characteristic or salient
    Category 5   Relatively neutral or unimportant
    Category 4   Somewhat uncharacteristic or negatively salient

    Category 3   Fairly uncharacteristic or negatively salient
    Category 2   Quite uncharacteristic or negatively salient
    Category 1   Extremely uncharacteristic or negatively salient

The present Preschool Behavior Q-Sort (PBQ) is an instrument revised and used by a group of seven psychologists who evaluated a minimum of 150 children over a 3 to 5 month period (Baumrind, 1972a). Prior to this study, the Preschool Behavior Q-Sort had been composed of 95 items and utilized in several observational studies (Baumrind, 1967; Baumrind and Black, 1967). The earlier studies were quite similar in nature with trained psychologists observing preschoolers over a three month period. The Preschool Behavior Q-Sort was revised in order to eliminate unreliable items, redevelop ambiguous items, and more tightly focus on independent and achievement-oriented behaviors. The team of seven psychologists met twice a week to clarify items and reach agreement on item definitions. In this study (Baumrind, 1972a) only one psychologist rated a group of children, while in a previous study (Baumrind and Black, 1967) two observers rated each child with the total scores consisting of a composite of the two evaluators' ratings.

The Denver Developmental Screening Test

The Denver Developmental Screening Test (DDST) is an instrument which compares a child's development to normative growth in the four areas of language, social, fine motor, and gross motor behavior. The instrument consists of 105 items obtained from an original 240 items derived from 12 existing preschool tests based on a sample of 200 infants and young children (Frankenburg, Dodds and Fandal, 1970). Children with known handicaps were excluded from the sample.

Standardization was based on 1,036 children (543 males and 493 females) between the ages of 2 weeks and 6.4 years living in the Denver, Colorado, area. The sample was representative of the Denver population in ethnicity and occupational characteristics. The Denver population is mostly white with an underrepresentation of low income groups.

The validity coefficient between the DDST and the Revised Yale Developmental Examination (RYDE) was .97. This was based on a small sample of 18 children varying in ages from 4 to 68 months. Fifteen of the 18 children scored below 90 I.Q. on RYDE. With such a small sample skewed in the direction of abnormality, the correlation is not particularly meaningful.

Test-retest reliability was based on 20 children representing a broad age range from 2 months to $5\frac{1}{2}$ years. More recently the DDST was compared to the Stanford Binet (N = 91; mean age, 52.5 months), the RYDS (N = 64; mean age, 33 months), Cattell Infant Intelligence Scale (N = 50; mean age, 12.8 months), and the Bayley Scales of Infant Development (N = 31; mean age, 6.2 months) (Frankenburg, Dodds, and Fandal, 1970). Most of the children fell within the range of slow learners and mentally retarded. Correlations range from .74 to .97. More studies with larger and more normal samples are needed to further validate the Denver Developmental Screening Test.

Reliability of the Data

Interrater reliability

Three independent sets of Preschool Behavior Q-Sort data were available for each child.[1] Each child had been rated separately by her or his classroom teachers and later rated jointly by both classroom teachers. The interrater reliability between teachers and between teacher-to-group ratings was with Student's t-tests and Pearson Product-Moment correlation coefficients. These techniques are the most sophisticated statistical methods available for Q-sort methodology. Q-sort tests cannot be appropriately analyzed with higher order multivariate techniques because the assumption of independence is violated by forcing numerical ratings in all categories for each child. The most sophisticated procedure available for the Q-sort technique is a direct case by case comparison of the same children rated by different teachers for each test item.

Two related analyses were made with each teacher-to-teacher comparison, the Student's t-test and the Pearson Product-Moment correlation coefficient. Both of these statistical techniques take different but related approaches to the same problem. The Student t tests the hypothesis $u_1 = u_2$. Here one is essentially asking whether there is a relationship between an independent variable (whatever empirical operation differentiates teacher A from teacher B) and the outcome (Harris, 1975). The empirical operation that

---

[1] There were two exceptions to this rule, as discussed on page 51.

differentiates the two teachers' ratings is the way each teacher rated the same child on the same item. Thus the t-test becomes a means to test interrater reliability, answering the question how similar were the teachers' ratings. Similarly the Pearson Product-Moment correlation coefficient computed between teachers A and B on each of the test items for paired cases assesses their relationship, or strength of interrater reliability. The Pearson r provides the investigator with information about the magnitude of the relationship of the dependent variables while the t-test indicates the relationship between the independent and dependent variables. Both statistical procedures attack the same problem from different angles. The methods complement one another, thus providing the investigator with a more complete understanding of the relationship of the variables. In this study these analyses provide an assessment of interrater reliability.

The interrater reliability between teachers was generally high. T-tests were performed on each of 72 items for teachers rating the same group of children with cases matched. For example, if teacher Q rated children a_1, b_1, c_1, . . . i_1, and teacher R rated the same children a_2, b_2, c_2, . . . i_2, then a t-test would be performed for item one with all children of the group paired a_1, a_2; b_1, b_2; c_1, c_2; . . . i_1, i_2. This procedure would be repeated 72 times, once for each of the 72 test items. This same procedure was used to produce correlations. Thus 72 correlations and 72 t-tests were performed for each set of teachers rating the same children. The

t-test revealed most of the teachers' ratings were not significantly different for each set of teachers, as one would expect for higher interrater reliability (see Table 3). The ratio of nonsignificant t-tests to the total number of t-tests calculated for each set of teachers provided an indication of how often the teachers did not significantly differ in the way they rated the children. Based on these ratios, the following percents of agreement between teachers were computed: 78%, 72%, 60%, 68%, 64%, and 79% respectively for teachers A through I.

The correlations provide another, and possibly a more accurate assessment of interrater reliability. Again, correlations were determined for each test item for teachers rating the same set of children with matched cases. Thus 72 correlations were produced for each pair of teachers rating the same set of children (see Table 3). Generally, interrater reliability was high. The ratio of correlations between .30 $\leq$ r $\leq$ 1.0, to all correlations determined for each set of teachers indicated high agreement between teachers. The specific percentages of agreement between teachers were as follows: 66%, 68%, · 64%, 79%, 75%, and 29%, respectively for teachers A through I. These are as expected. The low percentage of agreement between the last two teachers was entirely expected, as one of these teachers (teacher I) had missed half of the training sessions. Her co-teacher (teacher H) had attended all training sessions and had high agreement with the outside observer (see Table 6) as well as with the group rating, 54% (see Table 4). Teacher H's agreement with the outside observer and

TABLE 3

TEACHER TO TEACHER T-TESTS AND CORRELATIONS
FOR 72 BEHAVIOR Q-SORT VARIABLES

Groups	n	Total Pairwise T-Tests/ Correlations	Significant T-Tests $p < .05$	Correlations $.30 \leq r \leq 1.00$	Correlations $.20 \leq r \leq .30$
Teacher A to Teacher C	10 10	72	16	48	4
Teacher B to Teacher D	17 17	72	20	49	5
Teacher E* to Teacher F	22 22	72	29	47	11
Teacher E* to Teacher G	22 22	72	23	57	5
Teacher F* to Teacher G	22 22	72	26	54	11
Teacher H to Teacher I	27 27	72	15	21	14

* One classroom of 22 children had three teachers that each made independent ratings.

TABLE 4

TEACHER TO GROUP T-TESTS AND CORRELATIONS
FOR 72 BEHAVIOR Q-SORT VARIABLES

Groups	n	Total Pairwise T-Tests/ Correlations	Significant T-Tests $p < .05$	Correlations $.3 \leq r \leq 1.0$	Correlations $.2 \leq r \leq .3$
Teacher A to Group AC	10 10	72	9	47	6
Teacher C to Group AC	10 10	72	7	37	12
Teacher B to Group BD	17 17	72	9	59	2
Teacher D to Group BD	17 17	72	9	47	6
Teacher E to Group EFG	22 22	72	25	70	1
Teacher F to Group EFG	22 22	72	26	54	11
Teacher G to Group EFG	22 22	72	14	71	1
Teacher H to Group HI	27 27	72	5	39	10
Teacher I* to Group HI	27 27	72	23	32	11

*Teacher I missed many training sessions. Her data was not used in further analyses. However, since Teacher H ratings corresponded well with the outside observer ratings, Group HI data was included in further analyses.

TABLE 5

PAIRWISE T-TESTS BETWEEN OUTSIDE OBSERVER RATINGS
AND GROUP OR INDIVIDUAL RATINGS FOR 72 SOCIAL
BEHAVIOR VARIABLES

Groups	n	Total Pairwise T-Tests/ Correlations	Significant T-Tests $p < .05$	Correlations $.3 \leq r \leq 1.0$	Correlations $.2 \leq r \leq .3$
Outside Observer to All Groups	14 14	72	16	27	4
Outside Observer to Teacher A	5 5	72	11	45	8
Outside Observer to Teacher H	9 9	72	17	49	4

the group rating allowed inclusion of the group rating for this set of children in further analysis.

For two groups of children, n equal to 14 and 11, respectively, only two teachers' ratings were available, one teacher for each group. Thus only one teacher's ratings were available for a total of 25 children. However, both of these teachers also taught and rated other children in another group (Group AC). Each of these teachers (Teacher A and Teacher C) had few significantly different t-tests when compared to their group AC; nine significant t-tests of 72 variables or 88% agreement, and seven significant t-tests of 72 variables or 90% agreement, respectively (see Table 4). In addition, Teacher A to Teacher C t-tests lacked much difference, 16 significant t-tests or 72 behaviors or 78% agreement (see Table 3). These scores were an indication that their independent ratings of another group of children might be reliable.

For one of these two groups lacking group data (n = 14), the outside observer rated five children. Pairwise comparison for these five cases between Teacher A and the outside observer revealed 11 significant t-tests of a possible 72, or 85% agreement (see Table 5). This information further supported inclusion of the independent ratings of group (n = 14) with the other group data. There was no way to compare the remaining group (n = 11). The individual ratings were included to increase the N from 95 to 106 cases.

The interrater reliability between individual teachers and their group ratings with a co-teacher was also high. In fact, interrater

reliability was higher between independent teacher and group ratings, when compared to the reliability of teacher-to-teacher ratings. The same statistical procedures were performed with t-tests and correlations as described above. As expected fewer t-tests were significantly different (see Table 4). The ratio of nonsignificant t-tests to total number of t-tests performed provided an indication of the stability of the agreement between teacher and group ratings. The ratios of teacher-to-group agreement were as follow: 88%, 90%, 88%, 88%, 65%, 64%, 81%, 93%, and 68% respectively for teachers A through I.

The correlations between individual teacher ratings and their group ratings also indicated higher interrater reliability (see Table 4). Again procedures used were the same as outlined earlier. The ratios of correlations of $.3 \leq r \leq 1.0$, to total correlation performed for each teacher-to-group rating were: 65%, 51%, 82%, 65%, 97%, 75%, 99%, 54%, and 44% respectively for teacher A through I.

In summary, group and teacher ratings both appear to be reliable. Since the interrater reliability of group ratings to teacher ratings produced a greater number of high correlations and fewer significantly different t-tests, the group ratings were used for further analysis of the data.

Outside observer reliability

In addition to all of the teacher ratings, 19 children were observed and rated by an outside observer. The same procedures as discussed above for pairwise t-tests and correlations were performed between teacher group ratings and outside observer ratings (see Table 5). Few of the t-tests were significantly different. The percent of agreement based on the ratio of nonsignificant t-tests to total number of t-tests performed indicated 78% agreement. The percent of agreement based on the number of positive correlations $.2 \leq r \leq 1.0$, to total number of correlations performed was 43%. The agreement between outside observer and group ratings was lower than expected. This may be a result of the outside observer not having opportunity to share information with others, as the teachers did with their group ratings. This possibility is somewhat substantiated when considering the higher reliability between individual teacher ratings and the outside observer's ratings. The agreement between individual teacher to outside observer ratings based on t-tests indicated 85% and 76% agreement and the agreement based on the correlations indicated 74% agreement (see Table 5). These agreements represent high interrater reliability between individual teacher ratings and outside observer ratings. However, when these same ratings of children by the outside observer were compared to teacher group ratings, as discussed above, the agreement dropped to 43%. This may be a result of the outside observer not having the opportunity to hash out differences as the teachers did when they rated each child as a group. It ought to be

mentioned that the teachers spent many long hours resolving their differences in order to reach group consensus.

In summary, there was high interrater reliability between the individual teachers' and the outside observer's ratings. The interrater reliability between the outside observer and the group ratings was less high. This may be a result of a lack of opportunity for the outside observer to interact with others, as the teachers did when forming group consensus ratings.

Summary of interrater reliability

The analysis of interrater reliability for Q-sort techniques is not easily determined. In the past interrater reliability has been assessed by estimates of chance variation for item placement (Block, 1961). This only provides the investigator with one global indication of how greatly the data fluctuate which basically asks if the data are random or not (Harris, 1975). Pairwise t-tests and correlations of teacher-to-teacher ratings for each of the test items presents a more detailed and accurate indication of interrater reliability for Q-sort data. T-tests and correlations were produced for each of the 72 test items for comparisons of: teacher-to-teacher ratings, teacher-to-group ratings, outside observer-to-teacher ratings, and outside observer-to-group ratings. The majority of t-tests were not significantly different for each comparison. As well, the correlations revealed consistent positive relationships. Since there were higher correlations of group ratings (81%) as opposed to individual

ratings (63%) and outside observer ratings (43%), the group consensus
ratings were used for further analysis of the data.

Data Collection Procedure

Nine teachers from two preschool centers participated in the
study. A minimum of two teachers per preschool classroom was included
in the study. This was an important aspect of the study. The
investigator felt the difficulty of one of the instruments to be
used, the Preschool Behavior Q-Sort, which requires judgments by
the teachers, would not only need a check in interrater reliability,
but would also require a group consensus rating by co-teachers.
In other words, in order to insure agreement between teachers, each
teacher would rate the children by herself and later the co-teachers
together would re-rate the children. Thus the minimum of two
teachers having daily contact with the same children was an essential
prerequisite of the study.

All teachers received weekly two and one-half hour in-service
training for ten weeks. In addition, each week the teachers observed
and rated children for practice using the Preschool Behavior Q-Sort.
During this period of time each teacher was trained to use the Denver
Developmental Screening Test followed by administration of the test
to each child. After ten weeks of training each teacher rated her
students independently, that is, with no assistance or sharing of
information with other teachers with the Preschool Behavior Q-Sort.
This was followed by a four-week period in which each group of

teachers rated the children together. There were three reasons for requesting teachers to rate their children independently, prior to group ratings. When group consensus ratings are requested, the data may be influenced more by one teacher's dominance. That is, a head teacher, because of title, personality, or whatever, may influence the group rating more than the other teacher(s). If each teacher must first rate each child without communicating with the other teacher(s), extraneous influences of a domineering teacher might be minimized. The second reason for requiring independent ratings was to determine the reliability of the teachers' ratings. All previous studies using the Preschool Behavior Q-Sort ratings were made by master degreed psychologists. Since school teachers had not been included in previous studies, it was necessary to check and control for interrater reliability. The third reason for requiring independent, as well as group consensus ratings again related to past studies using the Preschool Behavior Q-Sort. In past studies interrater reliabilities were not always high. As a result psychologists' ratings were pooled (Baumrind and Black, 1967) or psychologists met weekly to discuss the meanings of the test items (Baumrind, 1971a). If psychologists had difficulty reaching agreement, possibly teachers would have similar problems. To guard against low interrater reliability, group ratings were required as well as independent teacher ratings.

In addition to test data, the following demographic information was collected on each child: age of child, sex of child, number of

siblings, parent's occupation, and family structure. Family structure
indicated whether the preschooler lived with one or two parents.
This information was collected to help understand potential relation-
ship between a child's social behaviors and background.

Method of Statistical Analysis

The major purpose of this study was to determine if a similar
underlying structure for the Preschool Behavior Q-Sort would be
maintained with a different population as indicated in hypotheses
one and two. Prior to a factor and cluster analysis of the data,
descriptive statistics were performed on the data. These descriptive
statistics included the distribution of frequencies, means, standard
deviations, and variances determined   for each of the 72 test items,
with the computer procedures from the Statistical Packages for the
Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975).

Next, Bartlett's test of sphericity was performed on the
correlation matrix to ensure adequacy of the data for further analysis.
The hypothesis associated with Bartlett's test of sphericity is that
the variables based on the sample correlation matrix of a multivariate
normal population are independent (Dziuban and Shirkey, 1964).
Variables that are factor analyzed are not expected to be totally
independent. Hence, rejection of the hypothesis of independence
indicates the data are appropriate for factor analysis (Dziuban and
Shirkey, 1964). Bartlett's test of sphericity was computed by the
formula:

$$- [(N-1)\ 1/6\ (2P+5)]\ \log_e\ |R|\ .$$

The computations produced a figure of 201,535.83, which exceeded

the appropriate chi square value, $X_{2.05\,(2556)} = 2697.54$. Thus the

hypothesis of independent variables was rejected. This deemed the

data appropriate for factor analysis of the intercorrelation matrix

of test items.

Factor and cluster analysis

The purpose of factor and/or cluster analysis is to group

variables into types which can be meaningfully defined. To the social

scientist variables may consist of personality traits, achievement

scores, or even physical attributes. For this study, the variables

are 72 social behaviors. Hopefully factor scores and group clusters

will help reduce the large number of variables to fewer, more general,

social behaviors.

The difference between cluster and factor analysis is one of

rigor. Factor analysis falls within parametric statistical tests.

Assumptions are made concerning the normal distribution of the

research sample, homogeneity of variance, and the equal intervals

of measures. Cluster analysis does not make any prior assumptions

of the data. This places cluster analysis within the realm of

nonparametric procedures.

Cluster and factor analysis are both based on correlation

matrices. However, cluster analysis does not provide interpretable

score loadings by which to exclude insignificantly correlated variables or objects. Cluster analysis does provide the social scientist with a broader picture of the relationship among all objects or variables. Since a previous study of the Preschool Behavior Q-Sort Test derived clusters, a cluster analysis of the data seemed appropriate. However, given the weakness of cluster analysis, the data were also factor analyzed.

Factor analysis

A factor analysis based on the Pearson Product-Moment correlation matrix of the 72 social behavior variables was computed. A principal component solution, with estimates of communality in the diagonals, was utilized from the SPSS computer program (Nie et al., 1975). According to Overall and Klett, utilization of principal components in this manner would be similar to the principal axis solution (Overall and Klett, 1972). A principal axis solution is more desirable for factoring of variables thought to be lacking in orthogonality. The interest here was with relationships among test variables and the relationships of the test variates to derived factors. Optimization of statistical properties was not the emphasis. Thus estimates of communality were used in the principal diagonal rather than unity. This procedure provided a more realistic relation-ship between the test variates and derived factors. The factors extracted from the SPSS subprogram Factor automatically deleted all factors with an associated eigenvalue of less than 1.0. Satisfactory convergence required 12 iterations. The criterion for convergence

was indicated when two successive sets of commonality estimates differed from each other by not more than 0.001. This factor analytic procedure was followed with oblique rotation of the factors. Obliquity was an a priori decision. The investigator was more interested in finding the least artificial factors rather than generating the optimal statistical properties.

Following the factor analysis of the data, factor scores were derived from factor weightings on each of the 72 items. These factor scores were then standardized by an SPSS computer procedure.

Cluster analysis

A cluster analysis was also computed with the Pearson Product-Moment correlation matrix of the 72 social behavior variables. This was calculated by a Type VII Olivier cluster analysis program (Olivier, 1973).

After factor scores were formed, Pearson Product-Moment correlations were performed on the factor and cluster scores with an SPSS computer program (Nie et al., 1975).

Multiple Regression Analysis

The final step in analysis of the data was to perform hierarchical multiple regression analysis on the factor scores to test hypotheses four and five. The independent variables included were the three cognitive subscores of the Denver Developmental Screening Test and the five demographic characteristics. The cognitive subscores were: fine motor skills, gross motor skills,

and language skills. The demographic variables were sex of
preschooler, age of preschooler, number of siblings, parents'
occupations, and family structure (one-parent or two-parent fam-
ilies). Again computation procedures were from an SPSS computer
program. Influences of the independent variables were then tested
by partialing the variance with Mood's test of communality
(Kerlinger and Pedhazur, 1973).

CHAPTER 4

RESULTS OF THE STUDY

The Findings

The purpose of this study was to explore social behaviors of
Caucasian low income preschoolers with the Preschool Behavior Q-Sort.
Previously this instrument had only been used with upper-middle income
children. In order to extend the population base to which the
instrument has been applied, further investigation was conducted
in this study using the same procedures, instrument, and definitions
(Baumrind, 1971a). The major concern of the study was to determine
if similar psychological labels could be derived from the analysis
when a different population was tested. If so, the next question
was to determine if similar sex differences as found by Baumrind,
would emerge. The other questions concerned the relationships
between the social behaviors of children and certain demographic
characteristics (such as age of child, sex of child, number of
siblings, family structure, and occupation of parents) and cognitive
scores (as measured by the Denver Developmental Screening Test).
It is only with consideration of relationships between environmental
background variables, cognitive skills, and social behaviors, that

62

that child learning will be further understood. Such research may
permit the public school systems to look beyond achievement scores
to consider the total development of children. In this chapter the
hypotheses that follow from the above questions are presented along
with the results obtained for each.

Hypothesis 1

There are no differences between Baumrind's seven clusters
of child instrumental competencies based on children from upper-middle
income families and the factors derived from this study based on
children from low income Caucasian families.

This hypothesis was rejected. Factor analysis of the Preschool
Behavior Q-Sort revealed two factors with sufficient eigenvalues.
These two factors accounted for 50% of the total variance (see
Table 6). Factor I was labeled Impudent Behavior and Factor II
was labeled Goal-Task Oriented Behavior as determined from the test
items with the largest factor loadings as presented in Table 6.
This finding of two factors accounting for 50% of the total var-
iance was not consistent with Baumrind's seven-cluster analysis
solution. Baumrind reported a large number of clusters as follows:
Cluster I, Hostile-Friendly; Cluster II, Resistive-Cooperative;
Cluster III, Domineering-Tractable; Cluster IV, Dominant-Submissive;
Cluster V, Purposive-Aimless; Cluster VI, Achievement Oriented-Not
Achievement Oriented; Cluster VII, Independent-Suggestible (Baumrind,
1971a). The nine items with high factor loads, thus describing

TABLE 6

FACTORS DERIVED FROM FACTOR ANALYSIS OF THE
PRESCHOOL BEHAVIOR Q-SORT

Variable Number	Description of Variable*	Factor Loading
	Factor I: Impudent Behavior Eigenvalue = 14.55**	
61	Tries to manipulate adults	.80
68	Provocative with adults	.65
27	Tries to evade adult authority	.59
11	Not concerned about adult disapproval	-.53
32	Disobedient	.52
36	Can question adult authority when he has a good reason	-.44
52	Sneaky, cannot be trusted	-.41
72	Thoughtless of other children's products	.32
70	Insulting	.31
	Factor II: Goal-Task Oriented Behavior Eigenvalue = 9.87**	
12	Gives best at work	.57
6	Likes to learn new cognitive skills	.54
16	Confident	.49
59	Purposive	-.42
8	Perseveres when frustrated	-.38
28	High energy level	.37
15	Knows what actions he wants to take and with whom	-.36
65	Accepts responsibility for wrong doing	-.31
42	Concerned about adult disapproval	.30

*
Variable descriptions have already been altered to reflect
negative or positive factor loadings.

**
Eigenvalues for other derived factors were: 3.78, 2.83, 2.35,
2.03, 1.90, 1.59, 1.51, 1.38, 1.30, 1.18, 1.01, .94, .84, .82, 74.

Factor I, Impudent Behavior, corresponded to items found in three of Baumrind's cluster structure as follows: four of the seven items (57% of the items) which described Cluster II, Resistive-Cooperative, were the same; two of the seven items (29% of the items) which described Cluster I, Hostile-Friendly, were the same; two of the four items (50% of the items) which described Cluster VII, Independent-Suggestible, were the same. A comparison of the two studies' structures indicated eight of the nine items of Factor I (or 89% of the items) were accounted for by only 44% of the items scattered among three of Baumrind's clusters.

The seven items with high factor loading, thus describing Factor II, Goal-Task Oriented Behavior, corresponded to items found in two of Baumrind's cluster structure; four of seven items (57% of the items) describing Baumrind's Cluster VI, Achievement Oriented-Not Achievement Oriented, were the same; three of nine items (33% of the items) describing Cluster V, Purposive-Aimless, were the same. Hence, all seven of the items in Factor II (or 100% of the items) were accounted for by some items in two of Baumrind's clusters accounting for 44% of the items in these two clusters.

Similarly, Factor I, Impudent Behavior, corresponded to some of the items in three of Baumrind's clusters. All three of these clusters had negative connotations as follow: Hostile, Resistive, and Suggestible. While only 44% of all the items of these three clusters related to all but one of the items of Factor I, the similarity of the psychological names given to the clusters and the

factor indicate Impudent Behavior is a psychologically meaningful and discriminating attribute of child social behaviors. Similarly, only 44% of all the items of two clusters corresponded to 100% of the items of Factor II. However, the psychological names of the factor (Goal-Task Oriented) and clusters (Achievement Oriented and Purposive) indicate some sort of achievement attribute is a discriminating attribute of child social behaviors. However, since the two-factor structure is different than Baumrind's seven-cluster solution, hypothesis one was rejected.

Hypothesis 2

There are no differences between Baumrind's seven clusters of child instrumental competencies based on children from upper-middle income families and the clusters derived from this study based on children from low income Caucasian families.

The cluster analysis in the present investigation resulted in three definitive clusters as follows: Cluster I, Responsible-Independent Leadership Behavior; Cluster II, Dependent-Disoriented Behavior; Cluster III, Aggressive-Independent Behavior. These clusters and the items related for each cluster are represented in Table 7. A comparison was made of the items related to the three clusters of this study and the items related to Baumrind's seven-cluster solution. No consistent patterns could be found between the three clusters of the present study and the seven-cluster solution of Baumrind's investigation. Thus hypothesis two was rejected.

TABLE 7

CLUSTERS DERIVED FROM CLUSTER ANALYSIS OF THE PRESCHOOL BEHAVIOR Q-SORT

No.	Cluster I: Responsible-Independent-Leadership Behavior	No.	Cluster II: Dependent-Disoriented Behavior	No.	Cluster III: Aggressive-Independent Behavior
44	Knows school routine	13	Timid	27	Evades
69	Responsible at school	60	Listener	61	Manipulates
32	Obedient	71	Nonintrusive	68	Provocative
52	Trusted	36	Does not question authority	2	Manipulates
67	Hits (self-defense)	10	Spectator	22	Incites culpable behavior
7	Nurturant	15	Vacillates	33	Destructive
41	Concern for adult disapproval	19	Disoriented	39	Adult supervision
23	Children seek company	59	Aimless	72	Thoughtless
24	Attention	30	Apprehensive	54	Bullies
21	Leader	11	Suggestible	70	Insults
3	Coordinated	66	Stereotyped	63	Selfish
38	Communicates	50	Socially withdrawn	5	Forceful
6	New skills	57	Withdraws	31	Argues
53	Stretches to meet situations	17	Lacks curiosity	48	Resists domination
12	Gives best work	34	Slow moving	62	Excludes others
42	Sets goals	20	Not structured in tasks	43	Gets other children in trouble
56	Content	25	Dependent on adults	65	Blame-avoidant
58	Friendly	14	Unoccupied	28	High energy level
49	Resists	46	Avoids peer interaction	51	Physically courageous
64	Individualist	9	Does not get alone	8	Does not persevere
16	Confident	45	Seeks company of others	26	Easily frustrated
1	Negative feelings expressed				
29	Emotionally expressive				
40	Competes				
47	Plans activity for others				
4	Pursues tasks				
18	Self starting				
37	Expresses preferences				
35	Helps				
55	Understands				

Hypotheses one and two were both rejected because the two
factors and three clusters differed so much from Baumrind's seven
clusters. Without any consistent patterns emerging between the
clusters of the two studies, Pearson Product-Moment correlation
coefficients were performed between Factors I and II and Clusters
I, II, and III of the present study to determine what if any
relationship there might be (see Table 8). As expected with oblique
rotation of factors and inclusion of all social variables in the
cluster analysis, all correlations were significant to the .01 level.
As expected, higher correlation coefficients were observed between
factors and clusters tapping similar attributes. Cluster I, the
Responsible-Independent-Leadership Behavior, correlates .80 with
Factor II, labeled Goal-Task Oriented Behavior. Similarly,
Cluster III, names Aggressive-Independent Behavior, correlated .93
with Factor I, labeled Impudent Behavior. The strength of the
relationship between Factor II and Cluster I, and Factor I and
Cluster III, indicated they are explaining quite similar attributes.

Hypothesis 3

If the factors of this study correspond to Baumrind's clusters,
then it is hypothesized that:

   3a. There is a positive correlation between factors labeled
       Achievement Oriented and Independent.

   3b. There is a positive correlation between factors labeled
       Achievement Oriented and Domineering.

TABLE 8

PEARSON CORRELATIONS BETWEEN FACTORS AND CLUSTERS
DERIVED FROM THE PRESCHOOL BEHAVIOR Q-SORT

	Cluster I	Cluster II	Cluster III
	Responsible-Independent-Leadership Behavior	Dependent Disoriented Behavior	Aggressive-Independent Behavior
Factor I Impudent Behavior	-.43*	-.54*	.93*
Factor II Goal-Task Oriented Behavior	.80*	-.61*	-.20**

*Significant $\underline{p}$ < .001.   **Significant $\underline{p}$ < .01.

3c. There is a positive correlation between factors labeled
   Achievement Oriented and Purposive.

3d. There is a positive correlation between factors labeled
   Domineering and Purposive.

3e. For boys there is a negative correlation between the
   factor labeled Achievement Oriented and the following
   factors: Hostile to Peers and Resistive to Adult Authority.

3f. For girls there is a positive correlation between the
   factors labeled Independent and the following two factors:
   Rejective to Peers and Resistive to Adult Authority.

Since the factors did not correspond to Baumrind's clusters,
these hypotheses were not testable.

Hypothesis 4

There is a significant correlation between the three cognitive
scales of the Denver Developmental Screening Test which are labeled
Language Skills, Fine Motor Skills, and Gross Motor Skills, and the
factor labeled Achievement Oriented of the Preschool Behavior Q-Sort.

The hypothesis was accepted. Analysis of the data of Factor II
with a hierarchical multiple regression supported the hypothesis
(see Tables 9 and 10). When the three cognitive subscales were
entered first in the regression, Language Skills, Fine Motor Skills,
and Gross Motor Skills each contributed to the prediction of Factor II,
$p < .01$. When the demographic variables were added to the regression,
Language Skills remained significant, $p < .05$ and Fine Motor and

TABLE 9

INTERCORRELATION MATRIX OF FACTORS DERIVED FROM THE PRESCHOOL BEHAVIOR Q-SORT,
DEMOGRAPHIC INFORMATION, AND SUBSCORES OF THE DENVER DEVELOPMENTAL SCREENING TEST

	Factor 1	Factor 2	Occupation	Siblings	Age	Family Structure	Sex	Fine Motor	Gross Motor	Language	Social
Factor 1	1.0000	-0.0719	0.1481	-0.0247	0.0873	-0.3970	0.2324	0.0780	-0.0951	0.1763	-0.0186
Factor 2	-0.0719	1.0000	-0.3054	-0.0127	0.0753	0.2121	-0.1807	0.3990	0.3579	0.2817	0.3425
Occupation	0.1481	-0.3054	1.0000	0.1904	0.0477	-0.4063	0.0712	-0.0227	-0.2386	-0.0161	-0.0808
Siblings	-0.0247	-0.0127	0.1904	1.0000	0.0234	0.1335	0.1497	-0.1248	-0.1916	-0.0497	0.0014
Age	0.0873	0.0753	0.0477	0.0234	1.0000	-0.0630	0.1238	0.0261	0.0311	0.0630	-0.0489
Family Structure	-0.3970	0.2121	-0.4063	0.1335	-0.0630	1.0000	0.0233	-0.0552	0.2334	-0.1291	0.0765
Sex	0.2324	-0.1807	0.0712	0.1497	0.1238	0.0233	1.0000	0.0100	-0.1114	-0.0228	-0.1216
Fine Motor	0.0780	0.3990	-0.0227	-0.1248	0.0261	-0.0552	0.0100	1.0000	0.0771	0.3485	0.4273
Gross Motor	-0.0951	0.3579	-0.2386	-0.1916	0.0311	0.2334	-0.1114	0.0771	1.0000	0.0647	0.2480
Language	0.1763	0.2817	-0.0161	-0.0497	0.0630	-0.1291	-0.0228	0.3485	0.0647	1.0000	0.1942
Social	-0.0186	0.3425	-0.0808	0.0014	-0.0489	0.0765	-0.1216	0.4273	0.2480	0.1942	1.0000

TABLE 10

MULTIPLE REGRESSION OF FACTOR II, GOAL-TASK ORIENTED BEHAVIOR,
WITH COGNITIVE SKILLS AND DEMOGRAPHIC INFORMATION

Independent Variables	Step	Beta	R Square Change	R Square	Multiple R	Pearson R
Social Skills	1	.0836	.1173	.1173	.3425	.3425
Fine Motor Skills	1	.3090*	.0781	.1954	.4421	.3990
Gross Motor Skills	1	.2354*	.0847	.2802	.5293	.3579
Language Skills	1	.1482**	.0179	.2981	.5460	.2817
Age of Child	2	.0875	.0032	.3012	.5487	.0753
Family Structure	2	.0920	.0314	.3326	.5767	.2121
Sex of Child	2	-.1611*	.0236	.3562	.5968	-.1807
Occupation of Parents	2	-.2129*	.0264	.3826	.6185	-.3054
Number of Siblings	2	.1286**	.0139	.3965	.6297	-.0127

* $p < .01$.   ** $p < .05$.

Gross Motor Skills were significant to the .01 level. As expected, Language, Fine Motor, and Gross Motor Skills did not contribute significantly to the noncognitive dependent variable, Factor I, Impudent Behavior (see Table 11).

Further analysis of commonality for Factor II indicated: Language Skills explained 1.9% of the variance by itself; Fine Motor Skills explained 10.9% of the variance; Gross Motor Skills explained 10.4% of the variance; 4.8% of the additional variance was shared between Fine Motor Skills and Language Skills (see Table 12). These results indicated the social attribute Factor II, Goal-Task Oriented Behavior which was based on teachers' ratings, definitely was related to cognitive skills scores of children based on their test performance.

Hypothesis 5

There is a significant correlation between factor scores and the following demographic characteristics: sex of preschooler, number of siblings, occupation of parents, family structure, and age of preschooler.

Hypothesis five was accepted. When the five demographic characteristics were entered first in the hierarchical multiple regression equation on Factor I, the independent variables parent structure (one- or two-parent families) and sex of preschooler each contributed significantly to the prediction ($p < .01$), accounting for 22% of the variance. These two variables, sex and parent

TABLE 11

MULTIPLE REGRESSION OF FACTOR I, IMPUDENT BEHAVIOR,
WITH DEMOGRAPHIC INFORMATION AND COGNITIVE SKILLS

Independent Variables	Step	Beta	R Square Change	R Square	Multiple R	Pearson R
Occupation of Parents	1	-.0291	.0219	.0219	.1481	.1481
Number of Siblings	1	.0050	.0029	.0248	.1576	-.0247
Age of Child	1	.0260	.0066	.0314	.1773	.0873
Family Structure	1	-.4000*	.1313	.1628	.4034	-.3970
Sex of Child	1	.2450*	.0556	.2184	.4673	.2324
Social Skills	2	.0130	.0017	.2201	.4691	-.0186
Fine Motor Skills	2	.0042	.0014	.2215	.4706	.0780
Gross Motor Skills	2	.0072	.0005	.2217	.4708	-.0951
Language Skills	2	.1240	.0131	.2349	.4845	.1763

* $p < .01$.

TABLE 12

COMMONALITY ANALYSIS OF THREE COGNITIVE
SKILLS ON FACTOR II

	Language Skills 1	Fine Motor Skills 2	Gross Motor Skills 3
Unique to 1, Language Skills	.0193		
Unique to 2, Fine Motor Skills		.1091	
Unique to 3, Gross Motor Skills			.1038
Common to 1 and 2	.0478	.0478	
Common to 1 and 3	.0039		.0039
Common to 2 and 3		.012	.012
Common to 1, 2, and 3	.0084	.0084	.0084
Σ	.0794	.1592	.1281

structure, remained significant ($p < .01$) after cognitive variables were added to the equation, with all dependent variables accounting for a total of 23% of the variance (see Table 11).

When demographic characteristics were entered first in a hierarchical multiple regression on Factor II, occupation and sex of child contributed significantly to the prediction ($p < .01$), accounting for 14.5% of the variance. After the cognitive variables were added to the equation, the two demographic variables, sex and occupation, remained significant at the .01 level, with 40% of the variance accounted for (see Table 13).

Further analysis with Mood's test of commonality for Factor I indicated that: demographic characteristics contributed 19% of the variance, cognitive variables contributed 1.6% of the variance, and both groups of variables accounted for 2.8% of the variance (see Table 14).

The test of commonality on Factor II indicated that: demographic characteristics contributed 9.8% of the variance, cognitive variables contributed 25% of the variance, and both groups of variables commonly shared 4.7% of the variance (see Table 15).

From these analyses it is apparent that demographic characteristics are significantly contributing to both factors. Moreover, Factor I is predicted more by the demographic variables, and Factor II is predicted more by the cognitive variables.

TABLE 13

MULTIPLE REGRESSION OF FACTOR II, GOAL-TASK ORIENTED BEHAVIOR,
WITH DEMOGRAPHIC INFORMATION AND COGNITIVE SKILLS

Independent Variable	Step	Beta	R Square Change	R Square	Multiple R	Pearson R
Occupation of Parents	1	-.2129*	.0933	.0933	.3054	-.3054
Number of Siblings	1	.1286	.0021	.0954	.3089	-.0127
Age of Child	1	.0875	.0080	.1034	.3216	.0753
Family Structure	1	.0920	.0086	.1120	.3347	.2121
Sex of Child	1	-.1611*	.0333	.1453	.3812	-.1807
Social Skills	2	.0837	.0897	.2350	.4848	.3425
Fine Motor Skills	2	.3090*	.0940	.3290	.5736	.3990
Gross Motor Skills	2	.2354*	.0488	.3778	.6146	.3579
Language Skills	2	.1482**	.0188	.3965	.6297	.2817

* $p < .01$.   ** $p < .05$.

TABLE 14

COMMONALITY ANALYSIS OF DEMOGRAPHIC INFORMATION
AND COGNITIVE SKILLS ON FACTOR I

	Demographic Information 1	Cognitive Skills 2
Unique Contribution of 1	.1901	
Unique Contribution of 2		.0165
Commonality of 1 and 2	.0283	.0283
Σ	.2118	.0448

TABLE 15

COMMONALITY ANALYSIS OF DEMOGRAPHIC INFORMATION
AND COGNITIVE SKILLS ON FACTOR II

	Demographic Information 1	Cognitive Skills 2
Unique Contribution of 1	.0984	
Unique Contribution of 2		.2512
Commonality of 1 and 2	.0469	.0469
Σ	.1453	.2981

Tests of commonality were performed for Factor I on the significantly contributing demographic variables: occupation, family structure, and sex of the child (see Table 16). This analysis indicated that: family structure was accounting for 15% of the variance; sex was accounting for 6% of the variance; occupation was only accounting for .1% of the variance; and all three variables were only sharing .5% of the variance.

Tests of commonality were also performed on Factor II with the significantly contributing cognitive variables: Language Skills, Fine Motor Skills, and sex of preschooler (see Table 17). This analysis revealed: Fine Motor Skills were accounting for 11% of the variance; Language Skills were accounting for 2% of the variance; sex was contributing 3% of the variance; most of the common variance was between Fine Motor Skills and Language Skills, accounting for 5% of the variance.

Another test of commonality was performed for Factor II on several of the demographic characteristics (see Table 18). Occupation accounted for 5% of the variance, family structure contributed 1% of the variance, occupation and family structure shared 4% of additional variance, and the sex of the preschooler accounted for 3% of the variance. Hence the demographic characteristic, occupation, was contributing more than family structure to Factor II, Goal-Task Oriented Behavior.

TABLE 16

COMMONALITY ANALYSIS OF THREE INDEPENDENT
VARIABLES ON FACTOR I

	Occupation 1	Family Structure 2	Sex 3
Unique to 1, Occupation	.0012		
Unique to 2, Family Structure		.1458	
Unique to 3, Sex			.0594
Common to 1 and 2	.0162	.0162	
Common to 1 and 3	−.001		−.001
Common to 2 and 3		−.0099	−.0099
Common to 1, 2, and 3	.0055	.0055	.0055
Σ	.0219	.1576	.0540

TABLE 17

COMMONALITY ANALYSIS OF THREE INDEPENDENT
VARIABLES ON FACTOR II

	Language Skills 1	Fine Motor Skills 2	Sex 3
Unique to 1, Language Skills	.0216		
Unique to 2, Fine Motor Skills		.1053	
Unique to 3, Sex			.0326
Common to 1 and 2	.0555	.0555	
Common to 1 and 3	.0016		.0016
Common to 2 and 3		-.0022	-.0022
Common to 1, 2, and 3	.0007	.0007	.0007
Σ	.0793	.1593	.0327

TABLE 18

COMMONALITY ANALYSIS OF THREE DEMOGRAPHIC
VARIABLES ON FACTOR II

	Occupation 1	Family Structure 2	Sex 3
Unique to 1, Occupation	.0504		
Unique to 2, Parents		.0112	
Unique to 3, Sex			.0273
Common to 1 and 2	.0358	.0358	
Common to 2 and 3		-.0019	-.0019
Common to 1 and 3	.0072		.0072
Common to 1, 2, and 3	-.0001	-.0001	-.0001
Σ	.0933	.0450	.0325

Summary of the Results of the Study

The statistical analysis of the data provided evidence to
accept or reject each of the hypotheses of this study with the
exception of hypothesis three. This information is summarized as
follows:

1. Differences were found between Baumrind's seven clusters
of child instrumental competencies based on children from upper-middle
income families, and the factors derived from this study based on
children from low income Caucasian families. The two factors of
this study and the seven clusters derived by Baumrind did not directly
correspond to each other. Factor I, Impudent Behavior, related to
some items found in three of Baumrind's clusters, Friendly-Hostile,
Resistive-Cooperative, and Independent Suggestible. Factor II,
Goal-Task Oriented Behavior, corresponded to some items found in
two of Baumrind's clusters, Achievement Oriented-Not Achievement
Oriented, and Purposive-Aimless.

2. Differences were found between Baumrind's seven clusters
of child instrumental competencies based on children from upper-
middle income families, and the clusters derived from this study
based on children from low income Caucasian families. Three clusters
were found: Cluster I, Responsible-Independent-Leadership Behavior;
Cluster II, Dependent-Disoriented Behavior; Cluster III, Aggressive-

Independent Behavior. No systematic patterns emerged between the three clusters of the present study and the seven clusters of investigation by Baumrind. With this unexpected result it was decided to correlate the clusters and factors of the present study to determine the degree and direction of relationships. All clusters and factors correlated significantly as expected ($p < .01$). Moreover Cluster I and Factor II correlated more highly, as did Cluster III and Factor I. This was indication that Cluster I and Factor II, and Cluster III and Factor I, were tapping the same attributes, as was expected.

3. Since the factors found in the present study with low income Caucasian children did differ from the clusters found in Baumrind's study of middle income children, it was not possible to examine relationships between the following factors: Achievement Orientation and Independence, Achievement Orientation and Domineering, Achievement Orientation and Purposive, Domineering and Purposive, and Hostility and Resistiveness.

4. Significant correlations were found between the three cognitive scales of the Denver Developmental Screening Test which were labeled Language Skills, Fine Motor Skills, and Gross Motor Skills, and the factor labeled Achievement Oriented of the Preschool Behavior Q-Sort.

5. Significant correlations were found in the expected directions between factor scores and the demographic characteristics: sex of perschooler, number of siblings, occupation of parents, family structure, and age of preschooler.

These findings do not support Baumrind's seven-cluster structure of the Preschool Behavior Q-Sort when applied to a low income Caucasian preschool population. However, the two-factor solution found in the present study supports Baumrind's initial theory of instrumental competence. A close look at Factor I, Goal-Task Oriented Behavior, indicates those behaviors most clearly related to Baumrind's clusters of Achievement Orientation, and Purposiveness, which are basic attributes to instrumental competence. Factor II, Impudent Behavior, related a little to three of Baumrind's clusters, Hostility, Resistiveness, and Suggestible. However, a consideration of the items in Factor II indicates that the factor may be related more closely to the concept of independent striving, which is also essential to instrumental competence. Only with longitudinal studies will such relationships between social behaviors and life success become clear.

Other findings of the present investigation indicated cognitive skills, as measured by the Denver Developmental Screening Test, significantly predict Factor II, Goal-Task Oriented Behavior. This is a particularly significant finding. The Goal-Task Oriented Behavior is basically an Achievement Oriented Behavior factor. Hence, this result provides empirical evidence that the teachers' ratings which

produced a social attribute called Goal-Task Oriented Behavior or Achievement Oriented Behavior were significantly related to the children's cognitive skill test scores. This result empirically supports the appropriateness of Factor II's label of Goal-Task Oriented Behavior or Achievement Oriented Behavior.

The last result, concerning the influence of demographic characteristics on the two factors, was also enlightening. Factor I, Impudent Behavior, was significantly predicted by the demographic characteristics with sex and parent structure contributing ($p < .01$) in expected directions, with male preschoolers and one-parent families predicting higher Impudent Behavior scores. Factor II was also significantly predicted by demographic characteristics, but to a lesser extent. Here employed parents and female preschoolers significantly predicted higher Goal-Task Oriented Behavior ($p < .01$). In addition it was found that Factor I was almost entirely predicted by demographic characteristics while Factor II was predicted mostly by cognitive skills but also by demographic characteristics. These findings are more fully discussed in the last chapter.

CHAPTER 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the social behaviors of low income Caucasian preschoolers. Previous to this investigation few descriptive studies of social behaviors of children had been reported in the literature. One of the major limitations of social behavior research has been the lack of instrument development to measure social behaviors of children accurately. Baumrind has developed a detailed test instrument to measure social behaviors of preschoolers (Baumrind, 1971a; Baumrind and Black, 1967). Prior to the present study, her test instrument had not been used with low income children. Thus the main purpose of this investigation was to compare the underlying structure of the instrument based on data collected in this study of low income Caucasian preschoolers to previous information reported on middle income Caucasian preschoolers. The secondary purpose of this study was to study the relationships of demographic characteristics and cognitive skills to the social behavior factors found in this study.

The present investigation began in the fall of 1976. Two day care centers in Somerville, Massachusetts, agreed to participate in the study. Nine teachers from the two centers received ten weeks of training which entailed weekly two and one-half hour training sessions and daily charting of child behaviors. This investigation required that a minimum of two teachers from each preschool classroom be included in the study. Since the social behavior test was a complex rating instrument, not previously used by teachers, the use of two teachers in each classroom was a critical aspect of the study. To insure reliability, each teacher was required to rate her preschoolers independently, i.e. by herself, and later re-rate her children with her co-teacher. Thus, following the ten-week training period, each teacher rated the preschoolers without assistance from or communication with her co-teacher. Following this three-week data collection period, each group of teachers re-rated the preschoolers as a team. These group ratings were referred to as group consensus ratings. The group consensus ratings were used for further analysis of the data.

Social behavior ratings and cognitive scores for Language Skills, Fine Motor Skills, and Gross Motor Skills were collected for 106 low income Caucasian preschoolers between the ages of 3 years, and 4 years and 11 months. The following background-environmental information was also collected: the number of siblings, the sex of preschoolers, the age of the preschoolers, the family structure (one-parent or two-parent families), and the occupations of the

parents. From the analysis of all data, the following results were obtained:

1. There was considerable difference between Baumrind's seven-cluster structure of child instrumental competencies based on children from middle income families and the two factors derived from this study based on children from low income Caucasian families. The two factors resulting from the present study were Impudent Behavior and Goal-Task Oriented Behavior. The seven clusters found from Baumrind's study were: Hostile-Friendly, Resistive-Cooperative, Domineering-Tractable, Dominant-Submissive, Purposive-Aimless, Achievement Oriented-Not Achievement Oriented, and Independent-Suggestible (Baumrind, 1971a).

2. There was no similarity between Baumrind's seven-cluster structure of child instrumental competencies based on children from middle income families and the three clusters derived from this study based on children from low income Caucasian families. No systematic relationships were found between the clusters of the present study labeled Responsible-Independent-Leadership Behavior, Dependent-Disoriented Behavior, and Aggressive-Independent Behavior, and Baumrind's seven-cluster solution.

3. There were significant Pearson Product-Moment correlations in the expected direction between the two factor scores and three cluster scores derived from this study ($p < .01$). As expected,

Factor I, Impudent Behavior, correlated higher with Cluster III,
Aggressive-Independent Behavior (r = .93); and Factor II, Goal-Task
Oriented Behavior, correlated highly with Cluster I, Responsible-
Independent-Leadership Behavior (r = .80). Similarly, Factor I and
Cluster II, and Factor II and Cluster III correlated negatively,
r = -.43 and r = -.20 respectively. Cluster II, Dependent-Disoriented
Behavior, corresponded negatively to both of the factors, r = -.54
and r = -.61 respectively.

4. There were statistically significant correlations between
the three cognitive scales of the Denver Developmental Screening
Test which were labeled Language Skills, Fine Motor Skills, and Gross
Motor Skills, when regressed on the factor labeled Goal-Task Oriented
Behavior of the Preschool Behavior Q-Sort (R = .63); p < .05, p < .01,
and p < .01 respectively. Further analysis of the commonality for
the Goal-Task Oriented Behavior indicated: Language Skills explained
2.1 percent of the variance, Fine Motor Skills explained 10.5 percent
of the variance, Gross Motor Skills explained 10.4 percent of the
variance, and 5.6 percent of additional variance was shared between
Fine Motor Skills and Language Skills.

5. There were significant correlations between the factor scores
and the following demographic characteristics: the sex of the
preschooler, the number of siblings, the occupation of the parents,
the family structure (one- or two-parent families), and the age of
the preschooler. More specifically, when demographic and cognitive

skills were regressed on Factor I, Impudent Behavior ($\underline{R}$ = .46),
demographic characteristics contributed to the equation with the
sex of the child and the family structure contributing significantly
($\underline{p}$ < .01). In all cases the contributions were in the expected
direction with male preschoolers, of unemployed one-parent families
related to higher Impudent Behavior factor scores.

When demographic information and cognitive scores were regressed
on Factor II, Goal-Task Oriented Behavior, the multiple correlation
was also high ($\underline{R}$ = .63). All demographic characteristics remained
in the equation with statistically significant contributions from
the occupation of the parents and the sex of the child ($\underline{p}$ < .01).
Again, results were in the expected direction with employed parents
of female preschoolers related to higher Goal-Task Oriented Behavior
factor scores.

Further analysis of commonality of the demographic character-
istics and cognitive skills indicated that demographic characteristics
were contributing 19% of the variance to Factor I, and cognitive
skills were contributing 2% of the variance, with 3% of the variance
shared between demographic characteristics and cognitive skills.
Commonality analysis of demographic information and cognitive skills
on Factor II, Goal-Task Oriented Behavior, indicated that demographic
information was accounting for 10% of the variance, while cognitive
skills were accounting for 25% of the variance, and 5% of the variance
was shared between demographic information and cognitive skills.
These further analyses of commonality indicated Factor I, Impudent

Behavior, was mostly predicted by demographic information and that
Factor II, Goal-Task Oriented Behavior, was predicted by both demo-
graphic and cognitive skills, with two and one-half times the variance
explained by cognitive skills.

Discussion

Considering the difficulty social scientists have had in
measuring social behaviors of preschoolers, the findings of this
study are encouraging. While the two factors derived from this study
did not correspond to the seven-cluster structure of Baumrind's
investigations, they clearly delineated two psychologically different
factors accounting for 50% of the total variance, and were signif-
icantly predicted by demographic characteristics and cognitive skills.
Moreover, when cognitive skill scores and family demographic character-
istics were regressed on each factor, Impudent Behavior, Factor I,
was predicted mostly by family demographic characteristics while
Goal-Task Oriented Behavior, Factor II, was predicted largely by
cognitive test scores. In addition each of the demographic character-
istics contributed significantly on each factor in the expected
direction. These facts clearly indicate that each factor represents
relevant behaviors of preschoolers.

Educators have continually viewed the learning process in terms of academic success. The total development of the child, her or his social behaviors, life style and home environment, has seldom been considered in the educational process. Only recently have investigators begun to ferret out the relationships of academic success to family patterns (Coleman, 1975; Jencks, 1972; Rupp, 1969). Prior to the present investigation, social scientists have not made comparisons of social attributes, family patterns, and academic success. This study provides empirical evidence that the social attributes based on a two-factor structure are directly related to the independent variables, cognitive test scores, and demographic characteristics. With these results educators can begin to view the learning process in broader terms. Preceding a full discussion of the specific educational implications of this study, the relevance of the two-factor structure is considered.

A comparison of Factor I, Impudent Behavior, with Baumrind's clusters indicated Factor I is a simpler, more efficient measure of the social attribute. There was no strong relationship between any one of Baumrind's clusters and Factor I. Instead, three of the clusters related to Factor I. All nine of the items (100%) describing Factor I, Impudent Behavior, were scattered among three of Baumrind's clusters, Resistive-Cooperative (57%), Hostile-Friendly (29%), and Independent-Suggestible (50%). While only some of the cluster items were similar, all three clusters were given names consistent with the connotation of Impudent Behavior, indicating the factor is a less cumbersome, more direct measure of the social attribute.

Similarly, the results of the present study strongly indicate Factor II, Goal-Task Oriented Behavior, is a more stable measure of achievement behavior in children than the two Baumrind clusters that were composed of some similar test items. All items but one (89%) which described Factor II, Goal-Task Oriented Behavior, were found in two of Baumrind's clusters, Achievement Oriented (57%), and Purposive (33%). Again, this factor is a more direct measure of the social attribute.

The capability of the two factors to represent different social attributes is supported by the strong relationships found between the factors and the independent variables, demographic and cognitive information. A high relationship was found btween Factor II, Goal-Task Oriented Behavior, and cognitive skill scores of children. With hierarchical multiple regression of cognitive scores and demographic information entered on Factor II ($\underline{R}$ = .63), it was found that the cognitive scores were each contributing significantly to Factor II accounting for 30% of the total variance. This is a very significant result indicating test performance of the preschoolers is precisely related to the social attribute Goal-Task Oriented Behavior. Of equal importance is the fact that Factor I, Impudent Behavior, was not related to the cognitive test scores of the preschoolers. A hierarchical multiple regression of cognitive skill scores and demographic information entered on Factor I, Impudent Behavior, revealed demographic information was accounting for 19% out of a total of 23% of the variance ($\underline{R}$ = .48).

These results indicate the two-factor structure obtained in the present study, rather than Baumrind's seven-cluster structure represents a more adequate solution for the low income Caucasian population. The differences found between Baumrind's cluster structure and the factor and cluster structures determined from the present investigation may reflect social class differences as well as geographic and/or community differences. Baumrind's studies were composed of upper-middle income families from the Berkeley, California, area while this study was composed of low income families from the Boston, Massachusetts, area, as reported on page 38. An investigation with a large sample composed of both social classes all from the same geographic region and/or community is necessary before the influence of such variables can be determined.

The relationships of each social behavior factor to school and life success is more apparent with a closer look at the findings. As mentioned above, when demographic characteristics and cognitive skills were regressed on Factor I, Impudent Behavior, the demographic characteristics were the best predictors. The male preschoolers and one-parent families contributed most to the demographic characteristics. Thus, children from one-parent families, particularly male preschoolers, may be expected to exhibit more independent, resistive, negative attention-getting behavior in the preschool setting. Given this information preschools may plan programs for children of single-parent families to encourage the positive aspects of independence, and discourage resistive and negative attention-getting behavior. The program should allow the children to be

independent and provide encouragement for acceptable school behavior.
An open preschool setting with a small teacher/child ratio may help
facilitate the social competencies of children of single-parent
families.

While Factor I was largely predicted by single-parent families,
Factor II, Goal-Task Oriented Behavior, was predicted mostly by
cognitive skills with all three skill areas, Language Skills, Fine
Motor Skills, and Gross Motor Skills making significant contributions.

For once there is evidence of relationships between social
attributes of children, based on teachers' ratings, and independent
unmanipulated variables. Thus the social behaviors related to
Goal-Task Oriented Behavior, such as giving one's best at work, being
self-confident, liking new cognitive skills, and persevering when
frustrated, do relate to test scores. Therefore the preschooler's
achievement performance relates to behaviors which contribute to
the learning process, or problem-solving behaviors. Reading and
math performance as well may be related to the task orientation of
the child, and the problem-solving strategies or behaviors he has
learned to use. This implies that the public schools may be more
effective developing problem-solving behaviors as exemplified in
the Goal-Task Oriented Behavior factor, rather than drilling children
on reading and math skills.

The relationships of demographic characteristics to Factor I,
Impudent Behavior, as well has relevance for the social scientist.
The behaviors related to Impudent Behavior, such as talking back

to the teacher; trying to manipulate adults; trying to evade adult authority; being sneaky, disobedient or insulting; and being thoughtless of other children's products; were directly related to one-parent families. If other studies also find these school-observed behaviors related to family structure, hopefully more relevant educational programs may be planned so that teachers can more effectively communicate with these kinds of children. It is important to note here that the factor Impudent Behavior was not related to cognitive scores. However, these behaviors may well influence the kind of reaction the preschooler receives from the teachers and classmates. Further study of this factor as it relates to teacher reinforcement patterns and later school success is needed in order to more fully understand the importance this social attribute may have in a child's later school and life success. Possibly the teachers' reactions to the child exhibiting the social attributes of Impudent Behavior are related to a decline in the child's later academic success. The academic decline of disadvantaged groups of children which has become known as the deficit hypothesis may relate directly to social attributes of children and lack of communication between the teacher and child (Deutsch and Brown, 1964; Jensen, 1974). As well, the problems of the single-parent family may result in fewer home learning experiences and may influence academic and later life success. As Coleman pointed out reading scores were related more to the home environment than to the school environment (Coleman, 1975). The relationship found between the single-parent

family and the child's Impudent Behavior provides evidence of the
influence of the home life on the child's preschool behavior. Only
with longitudinal investigations will the relationships of family
life, school success, and social behaviors be understood and related
to adult social competencies.

A particularly interesting finding of this study was the larger
contribution of Fine Motor Skills and Gross Motor Skills to cognition
when compared to Language Skills. Language Skills only contributed
3% to the variance, while Fine Motor Skills accounted for 11% of the
variance, and Gross Motor Skills accounted for 10% of the variance.
An additional 3% of the variance was shared between Langua e Skills
and Fine Motor Skills. The meaning of these unique contributions of
cognitive skills is difficult to determine. Possibly this indicates
that cognition is related to large body movements and eye-hand coordi-
nation during these early years. This would be in keeping with
Piaget's development approach (Piaget, 1955, 1962, 1970; Piaget and
Inhelder, 1969). Further investigation of cognitive skills is neces-
sary to adequately interpret these findings.

As expected from previous literature, the sex of the child
influenced the prediction of the social behavior factors. The sex
of the child accounted for 6% of the variance on Factor I and 3% of
the variance on Factor II. These contributions were in the expected
directions with boys receiving higher scores on Factor I, Impudent
Behavior, and girls receiving higher scores on Factor II, Goal-Task
Oriented Behavior.

The most interesting of the within-group differences was the effect of family structure (one- or two-parent families) and occupation (employed or unemployed families). Family structure accounted for 15% of the variance on Factor I but only 1% of the variance on Factor II. As expected, family structure contributed in the logical direction with one-parent families predicting higher scores on Factor I, Impudent Behavior. Occupation, on the other hand, accounted for only .1% of the variance on Impudent Behavior, but 5% of the variance on Factor II, with an additional 4% of the variance shared between occupation and parents on Factor II. Hence, occupation and family structure contributed in the expected direction on Factor II, with employed two-parent families predicting higher Goal-Task Oriented Behavior. But occupation did not contribute much at all on Factor I, Impudent Behavior. These results indicate one-parent families relate to children with higher Impudent Behavior scores and employed parents relate to children with higher Goal-Task Oriented Behavior scores. It was surprising that both independent variables, occupation and family structure, were not sharing more of the variance on both factors. To further understand these results, a similar study including more children and families is needed.

In summary, the findings of the present study support the appropriateness of a two-factor structure from which to interpret

social behaviors of preschoolers. Additional support for the
relevance of the factor structure is provided by the strong rela-
tionships found between the independent variables and the two
factors. Demographic characteristics predicted Factor I, Impudent
Behavior, and cognitive test scores predicted Factor II, Goal-Task
Oriented Behavior. However, only with further investigation of
larger groups of preschoolers will the most appropriate and most
relevant factor structure become apparent.

Moreover, this study provides evidence that cognitive test
scores are related to social behaviors of preschoolers, labeled
Goal-Task Oriented Behavior. This has implications for educators.
School programs which teach problem-solving strategies and/or
goal-oriented behavior may be as important, and possibly more
important, than the traditional educational programs that teach
reading and math mastery.

It should be noted that the other factor, Impudent Behavior,
was found not to relate to cognitive test scores. Impudent Behavior
includes such behaviors as evading adult authority, talking back
to the teacher, and disobeying teacher commands. The effect of these
particular behaviors on teacher behaviors, peer behaviors, and
consequently later school success, is a tantalizing but unanswered
question.

This study has provided empirical evidence that there are
relationships between social behaviors of preschoolers, their

cognitive test scores, and their demographic characteristics. While this is only one study, its implications for change in the structure of the educational system, for change in the parents' role, and for change in the teacher behaviors in order to facilitate instrumental competencies in children and adults, is profound. Previous investigations have found relationships between family patterns and academic progress of children. This study provides support for the influence the family structure has on the child in the preschool setting. Further study of social behaviors of children and their relationship to parent or teacher reinforcement patterns, problem solving strategies, and cognitive scores is certainly merited from these results.

Recommendations

The following recommendations are made for additional study in social behavior research as an outgrowth of this investigation.

Recommendation One

To further validate the factor structure obtained from this investigation of the Preschool Behavior Q-Sort, the data from this study of low income children should be directly compared to the data of Baumrind's middle income investigation. This would require permission from Baumrind to reanalyze her data with the data of the present study. With the assessment of such a heterogeneous group of children, the construct validity of this instrument could be better substantiated. As well, additional studies with different ethnic groups would be merited.

Recommendation Two

The Preschool Behavior Q-Sort is an instrument limited by Q-sort methodology. More thorough study of statistical procedures applicable to Q-sort methodology is needed in order to more fully understand and establish interrater reliability. Presently pairwise t-tests by two raters for each test item, as well as correlations between the two raters for each test item, seem to be the most sophisticated methods to check interrater reliability. The

exploration and development of more sensitive statistical procedures
would help substantiate the empirical nature of Q-sort tests.

Recommendation Three

Previous reviews of the literature indicate instruments using
rating procedures may produce different results than instruments
using direct observation procedures. To further understand social
behavior attributes, direct comparisons of instruments using both
of these procedures is necessary. That is, direct comparisons should
be made of children's social behavior attributes as based on the
rating instrument such as the Preschool Behavior Q-Sort and observa-
tional instruments. More specifically, observational information
from teacher-child task-oriented experimental design, as well as
observational scores based on parent-child interaction, would be
valuable. Hopefully, with these kinds of direct comparisons, specific
social behaviors common to observation and rating schedules would
be established.

Recommendation Four

The cognitive findings of this study indicate additional study
of social behaviors and cognitive skills would be beneficial. Prior
to this study the relationship of cognitive skills to social behavior
has not been well understood. If a variety of cognitive measures
were compared to a child's social behaviors, social scientists might
eventually find other ways to facilitate the development of

instrumental competence in children. This is particularly crucial
in the areas of language acquisition and reading. Many authorities
in the area of reading indicate cognitive processes cannot be fully
understood without more knowledge of the child's total functioning
(Kavanagh and Mattingly, 1972; McNeill, 1970; Posner, 1973).

Recommendation Five

To facilitate competencies in children a variety of infant
and early childhood educational programs have been operationalized
over the years (Gordon, 1971, 1973; Levenstein, 1971; Weikart, Deloria,
and Lawsen, 1970). All of these intervention programs have attempted
to improve and prepare the child for the elementary school experience.
To date none of these programs has effectively measured social
attributes of the young child. Generally, only cognitive scores and
problem-solving skills along with parenting skills have been measured.
Our understanding of the total child and the learning process may be
enhanced if social behaviors were measured. The Preschool Behavior
Q-Sort provides early childhood intervention programs with a means
to measure social behaviors. It is recommended that infants-at-risk
programs and preschool educational programs measure the social
attributes of their children so the learning process can be more
fully understood.

With the continued study of the total child, her or his social
behaviors, background and cognitive skills, possibly social scientists
will be able to influence the learning process both in school and

at home. As many more children are funneled into the public education
system, the dysfunctional nature of the education process has become
apparent. As study of the total child is emphasized in the domain
of education, hopefully more children will become learners and possess
instrumental competencies at adulthood, thus meeting the goal of
education.

APPENDIX A

THE PRESCHOOL BEHAVIOR Q-SORT CLUSTERS

No.	Description of Behavior	Average r
	Cluster I: Hostile-Friendly (reliability = .91, r^{-2} = .27)	
55	Understands other children's position in interaction	-.83
7	Nurturant or sympathetic toward other children	-.80
54	Bullies other children	.78
72	Thoughtless of other children's productions	.74
70	Insulting	.70
63	Selfish	.63
35	Helps other children carry out their plans	-.61
	Cluster II: Resistive-Cooperative (reliability = .96, r^{-2} = .31)	
32	Obedient	-.91
69	Responsible about following standard operating procedure at school	-.88
44	Actively facilitates nursery school routine	-.86
33	Impetuous and impulsive	.84
27	Tries to evade adult authority	.82
52	Can be trusted	-.81
68	Provocative with adults	.82
	Cluster III: Domineering-Tractable (reliability = .91, r^{-2} = .39)	
71	Nonintrusive	-.82
13	Timid with other children	-.75
67	Hits only in self-defense or doesn't hit at all	-.74
41	Concerned about adult disapproval	-.70
36	Does not question adult authority	-.69
2	Manipulates other children to enhance his own position or to get what he wants	.67

No.	Description of Behavior	Average r

Cluster IV: Dominant–Submissive (reliability = .90, r^{-2} = .24)

No.	Description of Behavior	Average r
21	Peer leader	.85
11	Suggestible	-.84
47	Plans activities for other children	.79
64	Individualistic	.70
48	Resists domination of other children	.65

Cluster V: Purposive–Aimless (reliability = .95, r^{-2} = .52)

No.	Description of Behavior	Average r
10	Spectator	-.86
14	Characteristically unoccupied	-.83
49	An interesting, arresting child	.82
59	Samples activities aimlessly, lacks goals	-.81
15	Vacillates and oscilates	-.81
19	Disoriented in his environment	-.77
16	Confident	.76
24	Dominates group activity	.75
18	Self-starting and self-propelled	.75

Cluster VI: Achievement Oriented–Not Achievement Oriented (reliability = .93, r^{-2} = .27)

No.	Description of Behavior	Average r
8	Does not persever when he encounters frustration	-.85
58	Stretches to meet the situation when much is demanded	.82
20	Does not become pleasurably involved in tasks	-.82
6	Likes to learn new skill	.81
42	Sets himself goals which expand his abilities, e.g. learning to pump on swings, trying difficult puzzles	.77
12	Gives his best to work and play	.71
26	Easily frustrated or upset when an obstacle to task performance is encountered	-.71

Cluster VII: Independent–Suggestible (reliability = .86, r^{-2} = .20)

No.	Description of Behavior	Average r
64	Individualistic	.85
11	Suggestible	-.78
66	Stereotyped in his thinking	-.71
36	Does not question adult authority	-.64

Note. Average r = the average correlation of the item with
the other cluster definers; reliability = the reliability of the
composite of the cluster definers (Spearman-Brown); r^{-2} = reproduci-
bility of the mean of the squared correlations among items.

Source. Baumrind, 1971a.

Dear Parents,

As you know at our center we are always trying to find ways to
improve our education program. This fall we have an observational
study that looks at ways children get along with each other and their
teachers. Each child will be observed and asked to play two games.
This study will help us understand the role that cooperation and
curiosity play in later school success. Please sign your name below
so we can include your child and if you later change your mind just
let us know and we won't include your child. Thank you very much.

_____
Parent's Signature

Director of Study:
Betty Bozler
47 Willard Grant Rd.
Sudbury, MA. 01776

NORC SCORES BY OCCUPATION, 1947 AND 1963

Occupation	NORC Score March 1947	NORC Score June 1963
U.S. Supreme Court Justice	96	94
Physician	93	93
Nuclear physicist	86	92
Scientist	89	92
Government scientist	88	91
State governor	93	91
Cabinet member in the Federal Government	92	90
College professor	89	90
U.S. Representative in Congress	89	90
Chemist	86	89
Lawyer	86	89
Diplomat in the U.S. Foreign Service	92	89
Dentist	86	88
Architect	86	88
County judge	87	88
Psychologist	85	87
Minister	87	87
Member of the board of directors of a large corporation	86	87
Mayor of a large city	90	87
Priest	86	86
Head of a dept. in a state government	87	86
Civil engineer	84	86
Airline pilot	83	86
Banker	88	85
Biologist	81	85
Sociologist	82	83
Instructor in public schools	79	82
Captain in the regular army	80	82
Accountant for a large business	81	81
Public school teacher	78	81
Owner of a factory that employs about 100 people	82	80
Building contractor	79	80
Artist who paints pictures that are exhibited in galleries	83	78
Musician in a symphony orchestra	81	78

Occupation	NORC Score	
	March 1947	June 1963
Author of novels	80	78
Economist	79	78
Official of an international labor union	75	77
Railroad engineer	77	76
Electrician	73	76
County agricultural agent	77	76
Owner-operator of a printing shop	74	75
Trained machinist	73	75
Farm owner and operator	76	74
Undertaker	72	74
Welfare worker for a city government	73	74
Newspaper columnist	74	73
Policeman	67	72
Reporter on a daily newspaper	71	71
Radio announcer	75	70
Bookkeeper	68	70
Tenant Farmer--one who owns livestock and machinery and manages the farm	68	69
Insurance agent	68	69
Carpenter	65	68
Manager of a small store in a city	69	67
A local official of a labor union	62	67
Mail carrier	66	66
Railroad conductor	67	66
Traveling salesman for a wholesale concern	68	66
Plumber	63	65
Automobile repairman	63	64
Playground director	67	63
Barber	59	63
Machine operator in a factory	60	63
Owner-operator of a lunch stand	62	63
Corporal in the regular army	60	62
Garage mechanic	62	62
Truck driver	54	59
Fisherman who owns his own boat	58	58
Clerk in a store	58	56
Milk route man	54	56
Streetcar motorman	58	56
Lumberjack	53	55
Restaurant cook	54	55
Singer in a nightclub	52	54
Filling station attendant	52	51

Occupation	NORC Score	
	March 1947	June 1963
Dockworker	47	50
Railroad section hand	48	50
Night watchman	47	50
Coal miner	49	50
Restaurant waiter	48	49
Taxi driver	49	49
Farm hand	50	48
Janitor	44	48
Bartender	44	48
Clothes presser in a laundry	46	45
Soda fountain clerk	45	44
Share-cropper--one who owns no livestock or equipment and does not manage farm	40	42
Garbage collector	35	39
Street sweeper	34	36
Shoe shiner	33	34

Source: Hodge, R. W., Siegel, P. M., and Rossi, P. M., Occupational prestige in the United States. In R. Bender and S. M. Lipsit (eds.), _Class, Status and Power_. New York: The Free Press, 1966, pp. 324-325.

BIBLIOGRAPHY

Armor, D. J. and Couch, A. S. An Introduction to Computerized Social
    Data Analysis Data-Text Primer. New York: The Free Press,
    1972.

Bartko, J. J. On various intraclass correlation reliability
    coefficients. Psychological Bulletin, 1976, 83, 762-765.

Baumrind, D. Effects of authoritative parental control on child
    behavior. Child Development, 1966, 37, 887-904.

Baumrind, D. Child care practices anteceding three patterns of
    preschool behavior. Genetic Psychology Monographs, 1967, 75,
    43-88.

Baumrind, D. Manual for the Preschool Behavior Q-Sort. Berkeley,
    California: University of California, 1968.

Baumrind, D. Current patterns of parental authority. Developmental
    Psychology Monographs, 1971a, 4, No. 1, Part 2.

Baumrind, D. Harmonious parents and the preschool children.
    Developmental Psychology, 1971b, 4, 99-102.

Baumrind, D. An exploratory study of socialization effects on black
    children: some black-white comparisons. Child Development,
    1972a, 43, 261-267.

Baumrind, D. Socialization and instrumental competency in young
    children. In W. W. Hartup (ed.), The Young Child, 1972b, 2,
    202-224.

Baumrind, D. and Black, A. E. Socialization practices associated
    with dimensions of competence in preschool boys and girls.
    Child Development, 1967, 38, 291-327.

Becker, W. C. and Krug, R. S. A circumplex model for social behavior
    in children. Child Development, 1964, 35, 371-396.

Bee, H. L., Van Egeren, L. E., Streissguth, A. P., Nyman, B. A.,
    and Leckie, M. S. Social class differences in maternal
    strategies and speech patterns. Developmental Psychology,
    1969, 726-734.

Beller, E. K. Dependency and independence in young children.
    The Journal of Genetic Psychology, 1955, 87, 25-35.

Beller, E. K. Dependency and autonomous achievement striving related
    to orality and anality in early childhood. Child Development,
    1957, 28, 287-315.

Berk, L. E. Effects of variations in the nursery school setting
    on environmental constraints and children's modes of adaptation.
    Child Development, 1971, 42, 839-869.

Blank, Marion. Teaching Learning in the Preschool, A Dialogue Approach.
    Columbus, Ohio: The Merrill Publishing Company, 1973.

Block, T. The Q-Sort Method in Personality Assessment and Psychiatric
    Research. Springfield, Illinois: Charles C. Thomas, 1961.

Boger, R. P. and Anbron, S. R. Subpopulational profiling of the
    psychoeducational dimensions of disadvantaged preschool children.
    E. Grotberg (ed.), Critical Issues in Research Related to
    Disadvantaged Children. Princeton, New Jersey: Educational
    Testing Service, 1969.

Brophy, J. E. Mothers as teachers of their own preschool children;
    the influence of socioeconomic status and task structure on
    teaching specificity. Child Development, 1970, 41, 80-94.

Bowlby, J. Attachment and Loss. Volume I: Attachment. New York:
    Basic Books, 1969.

Cazden, Courtney B., editor. Language in Early Childhood Education.
    Washington, D. C.: National Association for Education of Young
    Children, 1972.

Classified Index of Industries and Occupations. Washington, D. C.:
    U. S. Government Printing Office, 1971.

Clausen, J. A. Family structure, socialization, and personality.
    In Review of Child Development Research, L. W. Hoffman and M. L.
    Hoffman (eds.), vol. II, pp. 1-53. New York: Russell Sage
    Foundation, 1966.

Coleman, J. S. Methods and results of the IEA studies of effects
    of school on learning. Review of Educational Research, 1975,
    45, 3, 335-386.

Deutsch, M. and Brown, B. Social influences in Negro-white intelligence difference. Journal of Social Issues, 1964, 20, 24-35.

Deutsch, F. and Stein, A. H. The effects of personal responsibility and task interruption on the private speech of preschoolers. Human Development, 1972, 15, 310-324.

Devito, P. An analysis of selected behavioral characteristics of disadvantaged students. Journal of Educational Research, 1975, 68, 178-181.

Dorman, L. Assertive behavior and cognitive performance in preschool children. Journal of Genetic Psychology, 1973, 123, 155-162.

Dziuban, C. D. and Shirkey, E. C. When is a correlation matrix appropriate for factor analysis? Psychological Bulletin, 1964, 358-361.

Eastern Middlesex Human Resource Development Authority, FY 76 Comprehensive Manpower Plan Title I. Cambridge, Mass., 1976.

Emmerich, W. Continuity and stability in early social development. Child Development, 1964, 35, 311-332.

Emmerich, W. Continuity and stability in early social development: teacher ratings. Child Development, 1966, 37, 17-27.

Erikson, E. Childhood and Society. New York: W. W. Norton, 1950. Revised edition, 1963.

Ferguson, L. R., Partyka, L. B., and Lester, B. M. Patterns of parent perception differentiating clinical from nonclinical children. Journal of Abnormal Child Psychology, 1974, 2, 169-181.

Flavell, John H. Concept development. In Carmichael's Manual of Child Psychology, Paul H. Mussen (ed.), pp. 983-1059. New York: John Wiley & Sons, Inc., 1970.

Flynn, T. M. The personality characteristics of school readiness in disadvantaged preschool children. Journal of Instructional Psychology, 1974, 1, 45-52.

Follow Through Final Report, Institute for the Development of Human Resources, College of Education, University of Florida, Gainesville, Florida, 1975.

Frankenburg, W. K., Camp, B. W., and Van Nattie, P. A. Validity of the Denver Developmental Screening Test. Child Development, 1971, 42, 75-85.

Frankenburg, M. D., Dodds, J. B., and Fandal, A. W. Denver Developmental Test Manual. University of Colorado Medical Center, 1970.

Furth, Hans G. Piaget and Knowledge, Theoretical Foundations. Englewood Cliffs, New Jersey, Prentice-Hall, 1969.

Gesell, Arnold, et al. The First Five Years of Life, The Preschool Years. New York: Harper & Row, 1940.

Gordon, I. J. A home learning center approach to early stimulation. Gainesville, Florida: Institute for the Development of Human Resources, University of Florida, 1971.

Gordon, I. J. An early intervention project: a longitudinal look. Paper presented at the Merrill-Palmer Conference on Research and Teaching of Infant Development, 1973.

Gordon, I. J. and Breivogel, W. F. (eds.). Building Effective Home-School Relationships. Boston: Allyn and Bacon, 1976.

Gordon, I. J. and Jester, R. E. Instructional strategies in infant stimulation. Gainesville, Florida: Institute for the Development of Human Resources, University of Florida, 1972.

Gottfried, N. W. and Seary, B. An observational technique for preschool children. Journal of Genetic Psychology, 1973, 122, 263-268.

Gottfried, N. W. and Seary, B. Early social behavior: age and sex baseline data from a hidden population. Journal of Genetic Psychology, 1974, 125, 61-69.

Grossman, B. D. and Levy, P. S. A factor analytic study of coping behavior in preschool children. The Journal of Genetic Psychology, 1974, 124, 287-293.

Harris, R. J. A Primer of Multivariate Statistics. New York: Academic Press, 1975.

Hartup, W. W. Dependence and independence. H. W. Stevenson (ed.), Child Psychology, The Sixty-second Yearbook of the National Society for the Study of Education, 333-363. Chicago: University of Chicago Press, 1963.

Hartup, W. W. and Zook, E. A. Sex-role preferences in three- and four-year-old children. _Journal of Consulting Psychology_, 1960, 25, 420-426.

Hattwick, L. A. Sex differences in behavior of nursery school children. _Child Development_, 1937, 8, 343-355.

Heathers, G. Emotional dependence and independence in nursery school play. _The Journal of Genetic Psychology_, 1955a, 87, 37-57.

Heathers, G. Acquiring dependence and independence: a theoretical orientation. _The Journal of Genetic Psychology_, 1955b, 87, 277-291.

Hess, R. D., Shipman, V. C., Brophy, J. E., and Bear, R. M. Mother-child interaction. In I. J. Gordon (ed.), _Reading in Research in Developmental Psychology_, 177-197. Glenview, Illinois: Scott, Foresman and Co., 1971.

Hodge, R. W., Siegel, P. M., and Rossi, P. H. Occupational prestige in the United States. In R. Bender and S. M. Lipsit (eds.), _Class, Status and Power_. New York: The Free Press, 1966.

Huey, E. B. _The Psychology and Pedagogy of Reading_. Cambridge, The MIT Press, 1908.

Hunt, J. M. Environment, development, and scholastic achievement. In M. Deutsch, I. Katz, and A. R. Jensen (eds.), _Social Class, Race, and Psychological Development_. New York: Holt, Rinehart and Winston, 1968.

Jakubczak, L. F. and Walters, R. H. Suggestibility as dependency behavior. _Journal of Abnormal and Social Psychology_, 1959, 59, 100-106.

Jencks, C. _Inequality, A Reassessment of the Effect of Family and Schooling in America_. New York: Basic Books, 1972.

Jensen, A. R. Cumulative deficit: a testable hypothesis? _Developmental Psychology_, 1974, 10(6), 996-1019.

Kagan, J. Acquisition and significance of sex typing and sex role identity. In M. L. Hoffman and L. W. Hoffman (eds.), _Review of Child Development Research_, vol. 1, pp. 137-167. New York: Russell Sage Foundation, 1964.

Kagan, J. and Moss, H. A. The stability of passive and dependent behavior from childhood through adulthood. _Child Development_, 1960, 31, 577-591.

Kagan, J. and Moss, H. A. Birth to Maturity, A Study in Psychological Development. New York: John Wiley and Sons, 1962.

Kagan, J, Rosman, B. L., Day, D., Albert J., and Phillips, W. Information processing in the child: significance of analytic and reflective attitudes. Psychological Monographs, 1964, 78(1, Whole No. 578).

Karnes, M. B. and Zehrbach, R. R. Parental attitudes and education in the culture of poverty. Journal of Research and Development in Education, 1975, 8(2), 44-53.

Kavanagh, J. E. and Mattingly, I. G. (eds.). Language by Ear and by Eye, The Relationship between Speech and Reading. Cambridge, Mass.: The MIT Press, 1972.

Kerlinger, F. N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, 1969.

Kerlinger, F. and Pedhazur, E. Multiple Regression in Behavioral Research. New York: Holt, Rinehart and Winston, 1973.

Kirk, R. E. Experimental Design: Procedure for Behavioral Sciences. Belmont, Calif.: Brooks/Cole Publishing Co., 1968.

Klaus, R. A. and Gray, S. W. The early training project for disadvantaged children: a report after five years. Monographs of the Society for Research in Child Development, 1968, 33 (4, Serial No. 120).

Koch, H. L. The relation of "primary mental abilities" in five- and six-year-olds to sex of child and characteristics of his sibling. Child Development, 1954, 25, 3, 209-223.

Koch, H. L. Some personality correlates of sex, sibling position, and sex of sibling among five- and six-year-old children. Genetic Psychology Monographs, 1955, 52, 2-50.

Kogan, K. L. and Wimberger, H. C. Interaction patterns in disadvantaged families. Journal of Clinical Psychology, 25, 347-352.

Kohn, M. and Rosman, B. A social competence scale and symptom checklist for the preschool child: factor dimensions, their cross-instrument generality, and longitudinal persistence. Developmental Psychology, 1972a, 6, 430-444.

Kohn, M. and Rosman, B. Relationship of preschool social-emotional functioning to later intellectual achievement. Developmental Psychology, 1972b, 6, 445-452.

Kohn, M. and Rosman, B. Cross-situational and longitudinal stability of social-emotional functioning in young children. Child Development, 1973a, 44, 721-727.

Kohn, M. and Rosman, B. Cognitive functioning in five-year-old boys as related to social-emotional and background-demographic variables. Developmental Psychology, 1973b, 2, 277-294.

Kohn, M . and Rosman, B. A two-factor model or emotional disturbance in the young child: validity and screening efficiency. J. Child Psychol. Psychiat., 1973c, 44, 31-56.

Kohn, M. and Rosman, B. Social interaction in the classroom -- a comparison of apathetic withdrawn and angry-defiant children. The Journal of Genetic Psychology, 1974, 125, 165-175.

Lansky, L. M. and McKay, G. Independence, dependence, manifest and latent masculinity-femininity: some complex relationships among four complex variables. Psychological Reports, 1969, 24, 263-268.

Levenstein, P. Learning through (and from) mothers. Childhood Education, 1971, 48, 130-134.

Livson, N. and Mussen, P. H. The relation of ego control to overt aggression and dependency. Journal of Abnormal and Social Psychology, 1957, 55, 66-71.

Maccoby, E. E. (ed.). The Development of Sex Differences. Stanford, Calif.: Stanford University Press, 1966.

Maccoby, E. E. and Jacklin, C. N. The Psychology of Sex Differences. Stanford, Calif.: Stanford University Press, 1974.

Maccoby, E. and Masters, J. C. Attachment and dependency. In P. H. Mussen (ed.), Carmichael's Manual of Child Psychology, Vol. 2, 73-158. New York: John Wiley and Sons, 1970.

Madsen, M. Sub-cultural determinants of cooperative and competitive behavior. ERIC, 1967.

Manning, B., Pierce-Jones, J., and Parleman, R. Cooperative, trusting behavior in a "culturally deprived," mixed ethnic-group popula-tion. The Journal of Social Psychology, 1974, 92, 133-141.

Massachusetts Department of Commerce and Development. City and Town City of Somerville. Boston, Mass., March 1972.

McNeill, D. The Acquisition of Language, The Study of Developmental Psycholinguistics. New York: Harper & Row, 1970.

McKee, J. P. and Leader, F. B. The relationship of socio-economic
     status and aggression to the competitive behavior of preschool
     children. _Child Development_, 1955, 26, 135-142.

Medley, P. and Mitzel, H. Measuring classroom behavior by systematic
     observation. In N. J. Gage (ed.), _Handbook of Research on_
     Teaching. Chicago: Rand McNally & Co., 1963.

Miller, W. H. Longitudinal study of home factors and reading
     achievement. _California Journal of Education Research_, 1975,
     26(3), 130-136.

Mischel, W. A social-learning view of sex differences in behavior.
     In E. E. Maccoby (ed.), _The Development of Sex Differences_.
     Stanford, Calif.: Stanford University Press, 1966.

Mischel, W. Sex-typing and socialization. In P. H. Mussen (ed.),
     Carmichael's Manual of Child Psychology, Vol. 2, 3-73.
     New York: John Wiley and Sons, 1970.

Moore, N. V., Evertson, C. M., and Brophy, J. E. Solitary play:
     Some functional reconsiderations. _Developmental Psychology_,
     1974, 10, 830-834.

Mosteller, F. and Moynihan, D. P. _On Equality of Educational_
     Opportunity. New York: Vintage Books, 1972.

Murphy, G. _Personality, A Biosocial Approach_. New York: Harper, 1947.

Neff, W. and Cohens, T. A method for the analysis of the structure
     and internal consistency of Q-Sort arrays. _Psychological_
     Bulletin, 1967, 68, 361-368.

Nie, N., Hull, C., Jenkins, J., Steinbrenner, K., and Bent, D.
     Statistical Package for the Social Sciences, 2nd ed. New York:
     McGraw-Hill, 1975.

Olivier, D. C. Aggregative Hierarchical Clustering Program, Department
     of Psychology and Social Relations, Harvard University, Cambridge,
     1973.

Overall, J. E. and Klett, C. J. _Applied Multivariate Analysis_.
     New York: McGraw-Hill, 1972.

Pederson, F. A. and Bell, R. Q. Sex differences in preschool children
     without histories of complications of pregnancy and delivery.
     Developmental Psychology, 1970, 3, 10-15.

Piaget, Jean. _The Language and Thought of the Child_. New York:
     World Publishing, 1955. (First published in France in 1923.)

Piaget, Jean. Piaget's theory. In Paul H. Mussen (ed.), _Carmichael's Manual of Child Psychology_, 703-732. New York: John Wiley & Sons, 1970.

Piaget, Jean. _Play, Dreams and Imitation in Childhood_. New York: Norton & Company, 1962. (First published in France in 1946.)

Piaget, Jean and Inhelder, Barbel. _The Psychology of the Child_. New York: Basic Books, 1969. (First published in France in 1966.)

Pope, B. Socio-economic contrasts in children's peer culture prestige values. _Genetic Psychology Monographs_, 1953, 48, 157-220.

Posner, M. I. _Cognition: An Introduction_. Glenview, Ill.: Scott, Foresman and Co., 1973.

Rabban, M. Sex-role identification in young children in two diverse social groups. _Genetic Psychology Monographs_, 1950, 42, 81-158.

Rhine, W. R. Birth order differences in resistance to conformity pressure related to social class and level of achievement arousal. _Proceedings of the 77th Annual Convention, A.P.A._, 1969, 265-266.

Riccuiti, H. N. Social and emotional behavior in infancy; some developmental issues and problems. _Merrill-Palmer Quarterly_, 1968, 82-100.

Rupp, J. C. _Helping the Child to Cope with School_. Groninger, Netherlands: Wolters-Noodhoff, 1969: 161-180.

Sameroff, A. J. Early influences on development: fact or fancy? _Merrill-Palmer Quarterly_, 1975, 21(4), 267-294.

Samuels, S. J. and Turnure, J. E. Attention and reading achievement in first-grade boys and girls. _Journal of Educational Psychology_, 1974, 66(1), 29-32.

Santostefano, S. and Paley, E. Development of cognitive controls in children. _Child Development_, 1964, 35, 939-949.

Schaffer, E. S. Parents as educators: evidence from cross-sectional, longitudinal, and intervention research. W. W. Hartup (ed.), _The Young Child, Reviews of Research_, 1972, 2, 184-201.

Sears, R. R., Whiting, J. W. M., and Nowles, V. Some child-rearing antecedents of aggression and dependency in young children. _Genetic Psychology Monographs_, 1953, 47, 135-236.

Statts, A. W., Brewer, P. A., and Gross, M. C. Learning and cognitive development: representative samples, cumulative-hierarchical learning, and experimental-longitudinal methods. Monographs of the Society for Research in Child Development, 1970, 35 (8, Serial No. 141).

Streissguth, A. P. and Bee, H. L. Mother-child interactions and cognitive development in children. In W. W. Hartup (ed.), The Young Child, Reviews of Research, 1972, 2, 158-184.

Terman, L. M. Psychological sex differences. In L. Carmichael (ed.), Manual of Child Psychology,   954-1000. New York: John Wiley, 1949.

Terman, L. and Tyler, L. Psychological sex differences. In L. Carmichael (ed.), Manual of Child Psychology, 1064-1114. New York: John Wiley, 1954.

Tryan, R. and Bailey, D. Cluster Analysis. New York: McGraw-Hill, 1970.

Wachs, T. D., Uzgiris, I. C., and Hunt, J. M. Cognitive development in infants of different age levels and from different environmental backgrounds: an explanatory investigation. Merrill-Palmer Quarterly, 1971, 433-440.

Walters, J., Connor, R., and Zunich, M. Interaction of mothers and children from lower-class families. Child Development, 1964, 35, 433-440.

Walters, J., Pearce, D., and Dahns, L. Affectional and aggressive behavior of preschool children. Child Development, 1957, 28, 15-26.

Walters, M. The construction of personality: Some facts and fantasies about cognitive and social behavior. ERIC, 1971.

Ware, W. B. and Garber, M. The home environment as a predictor of school achievement. Theory into Practice, 1972, 11(3), 190-195.

Weikart, D. P., Deloria, D. J., and Lawsen, S. A. Longitudinal Results of the Ypsilanti Perry Preschool Project. Ypsilanti, Michigan: High/Scope Educational Research Foundation, 1970.

White, B. L. and Watts, J. C. Experience and Environment: Major Influences on the Development of the Young Child. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.

Wolff, R. The identification and measurement of environmental process
    variables related to intelligence. Doctoral Dissertation,
    University of Chicago, 1964. <u>Dissertation Abstract International</u>,
    1966, University Microfilms No. T10642.

Zuckerman, M. and Grosz, H. J. Suggestibility and dependency. <u>Journal
    of Consulting Psychology</u>, 1958, 22, 328.

Zunich, M. A study of relationships between child rearing attitudes
    and maternal behavior. <u>Journal of Experimenal Education</u>, 1961,
    30(2), 231-241.

Zunich, M. Lower-class mothers' behavior and attitudes toward child
    rearing. <u>Psychological Reports</u>, 1971, 29, 1051-1058.

BIOGRAPHIC SKETCH

Betty E. Bozler was born August 15, 1946, in Columbus, Ohio,
attended public schools in Grandview Heights, Ohio, and graduated
in 1965. She earned a B.S. with a major in education at The Ohio
State University in 1970, graduating with honors.

Her professional career included teaching assignments at Linden
McKinley High School; clinical work at Nisonger Center, The Ohio State
University: presidential duties and later advisory functions for the
Student Council for Exceptional Children; teaching and team leadership
assignments to the special education unit at a junior high school
in Southwestern City Schools, Columbus, Ohio.

In 1972 she enrolled in the master degree program in Foundations
of Education Department at the University of Florida. In 1973 she
received her M.Ed. from the University of Florida and entered a doctoral
program in Foundations of Education Department. In 1974 she moved
to Sudbury, Massachusetts, where she continued her doctoral studies.

While completing her doctoral work, she had opportunity to be
an educational consultant to the Acoma Indian Tribe of New Mexico,
to the Choctaw Band of Indians of Mississippi, and to several infancy
programs in the Northeast. In 1974 she directed the largest day care
center in greater Boston, Massachusetts. She presently is a Senior
Research Associate of RMC Research Corporation, Portsmouth, New
Hampshire, of which much of her time is spent implementing research
design for Title I programs in the Northeast.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.
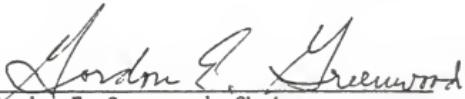
Gordon E. Greenwood, Chairman
Professor of Foundations of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

John M. Newell
Professor of Foundations of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.
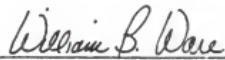
William B. Ware
Professor of Foundations of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.
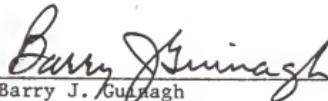
Barry J. Guinagh
Associate Professor of Foundations
of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

_____
Richard J. Anderson
Professor of Psychology

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Dcotor of Philosophy.

December 1977

_____
Dean, College of Education

_____
Dean, Graduate School